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ABSTRACT

Although both the content and the practice of environmental education have been widely researched, its leadership is only partly understood. This study explores the importance of mentoring during the personal and professional development of leaders in environmental education. Four major questions were investigated. First, have leaders been mentored during their involvement with environmental education? Second, when and how has mentoring taken place? Third, what was the personal and professional effectiveness of the mentoring relationship? Fourth, is there any continuation of the mentoring process which might be appropriate for professional development within the field of environmental education? Leaders were solicited from a broad field of environmental educators, from academia to the private sector. Research elicited data from 57 persons in Queensland, Australia, and Colorado. Three major categories of informal mentoring were revealed: (1) perceived; (2) acknowledged; and (3) deliberate. Further analysis led to the evolution of the core concept: a Cascade of Influence. This sample of leaders, mentors, and new mentorees moved from the perception of having been mentored to the acknowledgment of these relationships and an affirmation of their efficacy for personal and professional growth. Heightened awareness and more frequent cascading of mentoring have positive implications for professional development of future leaders. Contains 364 references. (Author/PVD)

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ED 406 193

MENTORING EXPERIENCES AS PROFESSIONAL DEVELOPMENT FOR LEADERS IN ENVIRONMENTAL EDUCATION:

THE CASCADE OF INFLUENCE

CAROL ANN FORTINO

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Mentoring Experiences as Professional Development for Leaders in Environmental Education: the Cascade of Influence

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DECLARATION

The work contained in this thesis has not been previously submitted for a degree or diploma at any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signed: Carol Fortino

Date: August 22, 1996

Abstract

Environmental education is a field which has only come of age since the late nineteen sixties. While its content and practice have been widely debated and researched, its leadership has been minimally studied and, therefore, is only partially understood. The role of mentoring in the development of leaders has been alluded to, but has attracted scant research. Therefore, this study explores the importance of mentoring during the personal and professional development of leaders in environmental education. Four major research questions were investigated. Firstly, have leaders been mentored during their involvement with environmental education? Secondly, when and how has that mentoring taken place? Thirdly, what was the personal and professional effectiveness of the mentoring relationship? Fourthly, is there any continuation of the mentoring process which might be appropriate for professional development within the field of environmental education?

Leaders were solicited from a broad field of environmental educators including teachers, administrators, academics, natural resource personnel, business and community persons. They had to be recognised as active leaders across several environmental education networks. The research elicited qualitative and quantitative survey data from fifty-seven persons in Queensland, Australia and Colorado, USA.

Seventeen semi-structured interviews were subsequently conducted with selected leaders who had nominated their mentors. This led to a further thirteen 'linked interviews' with some of the mentors' mentors and new mentorees. The interview data is presented as four cases reflecting pairs, triads, chains and webs of relationships - a major finding of the research process. The analysis of the data from the interviews and the surveys was conducted according to a grounded theory approach and was facilitated by NUD.IST, a computer program for non-numerical text analysis.

The findings of the study revealed many variations on the classical mentoring patterns found in the literature. Gender and age were not seen

as important factors, as there were examples of contemporaries in age, older men to younger women, older women to younger men, and women to women. Personal compatibility, professional respect and philosophical congruence were critical. Mentoring was initiated from early, mid and late career stages with the average length of the relationship being fourteen years. There was seldom an example of the mentoree using the mentor for hierarchical career climbing, although frequent career changes were made. However, leadership actions were found to increase after the intervention of a mentoring relationship. Three major categories of informal mentoring were revealed - perceived, acknowledged and deliberate. Further analysis led to the evolution of the core concept, a 'cascade of influence'.

The major finding of this study was that this sample of leaders, mentors and new mentorees moved from the perception of having been mentored to the acknowledgment of these relationships and an affirmation of their efficacy for both personal and professional growth. Hence, the participants were more likely to continue future mentoring, not as a serendipitous happening, but through a deliberate choice. Heightened awareness and more frequent 'cascading' of mentoring have positive implications for the professional development of future leaders in environmental education in both formal and informal settings. Effective mentoring in environmental education does not seek to create 'clones' of the mentors, but rather to foster the development of autonomous mentorees who share a philosophical grounding. It is a deliberate invitation to 'join the clan'.

ACKNOWLEDGMENTS

It has been said that when a person chooses to do a PhD later in his/her career, it becomes 'an affair of the heart'. The process is often long and 'heart-wrenching', but the results can renew a passion for learning. This journey cannot be taken alone. Therefore, I would like to acknowledge and give my sincere thanks to the following people for their help and support in completing this PhD thesis.

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Dr. Sue Burroughs-Lange in the School of Learning and Development introduced me to NUD.IST and broadened my knowledge regarding grounded theory methodology. Ms. Christine Bruce from the School of Information Systems was the early impetus for me to present the study to various outside groups and have my ideas challenged in a formative way. I thank her for the confidence-building 'pre-orals'.

From the University of Queensland, Associate Professor Jim Butler acted as a critical friend and taught me how to approach a PhD study and to debate its premises. His assistance was invaluable. Dr. Tony Baglioni helped me with the statistical analysis. A very special appreciation goes to Dr. Warren Beasley who was always willing to read the roughest cuts. His support was crucial throughout this endeavour.

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Chapter One

1.0 Introduction to the Study - a personal statement

This research is based on the personal premise that the ultimate goal of environmental education is to foster an understanding of the human influence on interwoven ecological relationships which affect the long-term maintenance and sustainability of a healthy planet. This knowledge should lead to a personal commitment to responsible decision-making and consequent action.

This study did not begin in a vacuum, but rather stemmed from my own interest and work in the field of environmental education during the last thirty years as a middle school science teacher, facilitator for *Project Learning Tree*, curriculum writer and facilitator for *Project WILD*, consultant and tertiary lecturer in science and environmental education.

During my years as a workshop facilitator, I became intrigued by those teachers and natural resource personnel who made the professional development leap from the classroom or field job to a leadership position. I found that, typically, out of a group of thirty workshop participants, maybe five would demonstrate a 'spark' of interest in becoming a facilitator. Three of those might follow it up by 'wrangling' an invitation to a leadership training conference. Here they could examine their beliefs and attitudes about teaching environmental education and, if they were classroom teachers, hone their skills for teaching adults or, if they were natural resource personnel, learn how to teach children. From there, one person might demonstrate the personal and professional commitment needed to become a dynamic environmental education leader recognised by his/her peers.

Wondering why, what or who helped these leaders change the direction of their careers, my initial brainstorming suggested ideas such as exciting new curriculum projects, personal life changes, burnout, peer support, networking and 'mentor', a word with which I was only vaguely familiar. A few formal mentoring programs were beginning to be offered in school settings, but little seemed to be happening within the circle of environmental education.

I began to question some of my environmental education colleagues about the idea of mentoring. Many of these people were recognised as active leaders at state, regional and even national levels. They were anxious to tell me immediately who their mentor was and the entire story of how mentoring had occurred informally through serendipitous associations, chance meetings or deliberate networking. My area of study began to take focus.

As I began to read the literature about mentoring for this study, I paused to consider if I had had a mentor who had aided my career involvement with environmental education. The influence of George Ek, the director of conservation education for the state of Colorado, was self-evident in my professional growth and has sustained me personally over the last twenty years. But I had never really acknowledged him as my mentor, nor had I examined the progression of our relationship, nor reflected about what it meant to me personally or professionally. A survey of environmental education leaders could help determine if others had benefited by similar experiences.

In setting the criteria for being designated an environmental 'leader' as someone who was recognised by his/her peers across several networks, I needed to acknowledge my personal acquaintance with many of the survey participants from the United States and our common understanding of an environmental education 'world view'. Also, the dawning realisation of the significance of my own mentoring experience necessitated a special relationship between the researcher and those researched. This phenomenon has been described by Gadamer (in Elliott, 1988) as two interlocking action research cycles in which both are reflective practitioners.

Having the opportunity to study in Australia presented another challenge. I had limited time to identify this environmental education network, to find out who were the key players across groups, and to establish if these people were recognised by their peers for their leadership activities. The search was aided by the late Mr. Edwin Butt, an eminent Australian environmental educator, who took this newcomer under his wing. Finding these leaders meant that the sample for the survey could involve both Queensland and Colorado participants and thereby add to the richness of the data regarding mentoring experiences.

On the basis of my preliminary readings about mentoring in other settings such as education, business and nursing, I began with an assumption that mentoring would be found to be a beneficial adjunct during the formative stages of a career in environmental education. However, other questions were raised for the broad field of environmental education. Would leaders recognise the experience of mentoring? Would they be able to identify one significant mentor for their work in environmental education? Would their experiences follow the 'classic' pattern - an older, wiser mentor to a younger protégé? Did mentoring happen at crucial stages in their career? Was continued contact with mentors crucial when the leaders became self-reflective about the critical issues and philosophies of environmental education or when they were contemplating career changes? Importantly, if the leaders were to acknowledge these experiences, would there be any evidence of a continuation or 'cascade' of mentoring. These were questions that would need clarification during in-depth interviews.

My original aim was to undertake paired interviews between the leader/mentorees and their mentors and perhaps the leaders and their new mentorees. However, during the interviews with the mentors, they were asked if they had experienced a mentor of their own. Their positive response led to a broader opportunity that I felt privileged to take. As the interviews led backwards and then forward, I realised I was no longer in an 'interlocking action research cycle', just comparing my mentoring experience with that of someone else. I was now the keeper of a very important series of stories, the nature of which I had not seen described in the general literature and rarely mentioned in environmental education. Now instead of having just a research 'requirement', I had a 'responsibility' - to tell these stories empathetically, thereby honouring the subjects, and to analyse the data competently, thereby producing scholarly work.

The words of Renata Tesch kept playing in my head as I pondered how much researchers could plan in advance for this kind of qualitative study.

> They don't set out on their journey unprepared. Just like the adventurous traveller who doesn't stay in one and the

> same place for the duration of the entire trip, and therefore packs a suit and a tie (or, in my case, heels and a dress) along with hiking boots and bathing suit, the qualitative researcher is well prepared for all kinds of opportunities that might open up. Being flexible does not mean being poorly equipped for the expedition.
>
> Tesch, (1988: 69)

The process of this study can be likened to a raft trip down a wild river. The original destination of the journey has never changed. Understanding the mentoring experiences of leaders in environmental education is the main research focus. However. there have been opportunities for unexpected stops in small coves. The chance to interview previous mentors and new mentorees could not be wasted. There have been opportunities for hikes up side-canyons, long, circuitous, sometimes exhausting, to find the source of a hidden waterfall. The patterns of chained and webbed mentoring needed to be explored to their beginnings even when this involved physical travel to three continents and cyberspace journeys over three years to track down the details.

Eventually, the climb to the top of the trail revealed the wnite spray of the waterfall cascading from pool to pool, slowly carving a channel through rock and soil, winding its way back to the river below. The possibility of seeing this kind of panoramic view was not even imagined at the beginning of the expedition. What did mentoring mean in this vista of life experience? Just like the quiet momentum that drives a single droplet of water over the top of the falls to join a cascade below and to eventually become part of the river's current, the mentor can influence a mentoree toward an ever-broadening personal and professional development which transforms his/her leadership in the field of environmental education. This is the story revealed and examined in this study.

1.1 Background to the Research

This study reports the mentoring experiences of leaders in environmental education. It seeks an understanding of the context, conditions, strategies, processes and consequences of these mentoring relationships. The leaders were selected across several environmental networks in Colorado, USA, and Queensland, Australia. The research is placed within the domain of environmental education and the arena of leadership. The main focus is within the sphere of mentoring and the sector of professional development. These overlapping fields are represented in the Venn diagram *Figure 1.1* and explained further in Chapter Two.

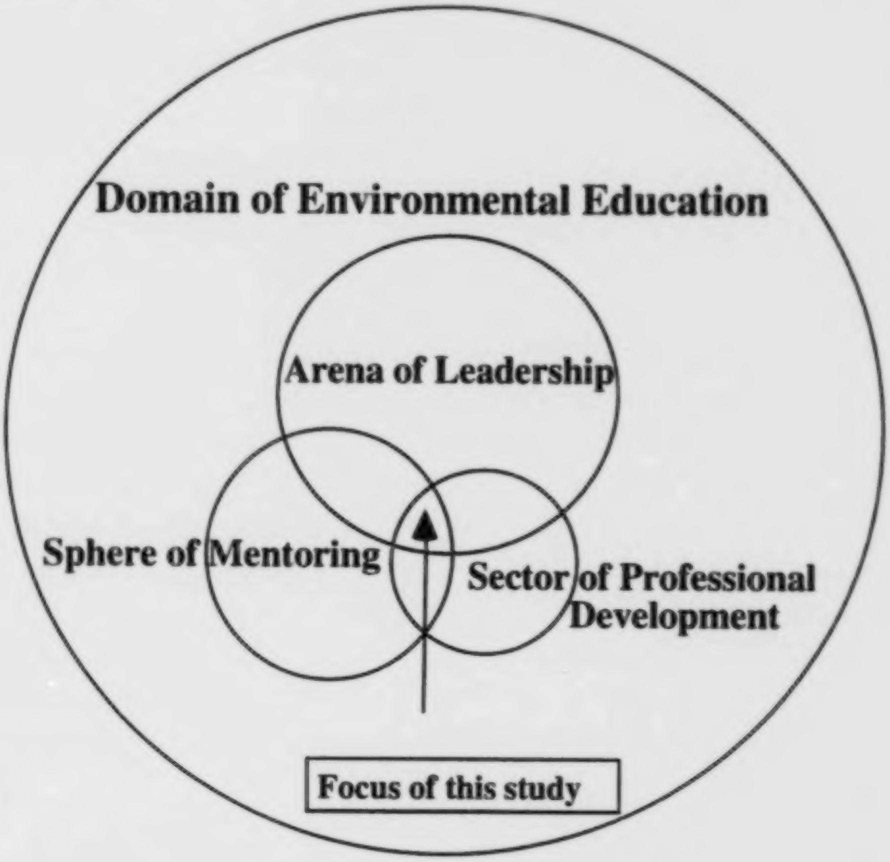
Domain of Environmental Education
Arena of Leadership
Sphere of Mentoring
Sector of Professional Development
Focus of this study

Figure 1.1 Context of the study: mentoring experiences as professional development for leaders in environmental education .

The importance of this research lies in its potential to contribute to the general body of knowledge on mentoring, to enhance the understanding of mentoring in the field of environmental education, to discover its role in the personal and career development of identified leaders, and to distil recommendations for extending any 'cascade effect' of mentoring experiences to future leaders in environmental education.

Widely acclaimed 'activists' whose deeds are renowned in books and the media are not a part of this study. Instead, 'quiet achievers' were chosen based on the recognition by their peers for the quality of their activities beyond everyday job responsibilities. Some of these leaders subsequently nominated their most influential mentors during their careers in environmental education. This study elucidates the details of these specific mentoring relationships: how they were perceived and became acknowledged; were developed and maintained through periods of dormancy; were reactivated and sustained over time.

1.1.1 Environmental education - the domain of study

Environmental education has become a term in its own right since the late 1960s. It gained international importance through the efforts of UNESCO-UNEP (1978) which recommended goals, objectives and principles for environmental education. These included elements of scientific knowledge as well as social and economic awareness and skills for responsible action.

Hungerford, Peyton and Wilke (1980: 43) defined environmental education in the United States as a process which enables citizens to become environmentally knowledgeable and skilled in working toward a "dynamic equilibrium between quality of life and quality of environment". In Australia, Robottom (1984) and Fien (1993) argued for educational approaches which foster awareness, scientific knowledge and socially responsible action *in, about,* and *for* the natural and built environment.

Environmental education has also been defined in terms of an array of approaches to informing citizens about the fragile relationships on planet earth (Wals, Beringer and Stapp, 1990). Abiotic factors of soil, water, and air are interdependent with the earth's rich biodiversity of organisms, including the human animal who has the greatest capacity to impact ecological and social relationships both positively and negatively (Capra, 1982; Huckle, 1991). Therefore, this research begins with the premise that the ultimate goal of environmental education is the understanding of human influence on the interwoven ecological relationships which affect the long-term maintenance and sustainable development of a healthy planet (IUCN, 1991; Lowe, 1992).

1.1.2 Diversity within the field of environmental education

Smith-Sebsato (1993) pointed out that persons interested in the domain of environmental education frequently do not know the options for careers available in this field. Warner (1992) described 'green-collar' jobs ranging from agronomist to community relations manager, fund raiser to technical writer, teacher to interpretive naturalist, community activist to communication arts professional. A survey by the Ecological Society of America (Holland *et al.*, 1992) showed that ecologists are employed in academia, government, private consulting firms, environmental organisations and private foundations. In a study of environmental education research and change, Janse van Rensburg (1994) extended the range of green professionals to include those from technical colleges and non-government community development organisations. Leadership positions can vary from the backrooms of grassroots community groups to the executive boardrooms of national organisations. Smyth (1995: 13) summarised this trend.

> Because of its breadth, environmental educators already come from a very wide range of backgrounds in the science, humanities and arts, from formal and informal education, from government agencies, industrial training and voluntary bodies, and with priorities ranging through nature protection, cherished landcapes, stately homes, urban planning, public health, inner city deprivation, educational reform, planned parenthood and many more.

Recognising the diversity within the field of environmental education, this study involved participants from many orientations. Their current leadership role designations included: teachers, volunteers, interpretive naturalists, directors of educational units for companies, university professors, policy makers, environmental trainers, community workers, cooperative extension agents, foresters, natural resource personnel, authors, consultants, presidents of volunteers organisations, plant and animal researchers.

1.1.3 Research on leaders in environmental education

Nearly two decades ago a major thrust of environmental education was the production of an active and informed citizenry (Hungerford, 1977) who would work toward sound ecological principles such as the development of knowledge, skills and attitudes concerning critical environmental issues.

In the ensuing twenty years, while substantial research has been conducted on the 'why', 'what', 'where', and 'how' of environmental education (ERIC Search 1970-1990), only a few studies have focused on the 'who'. Gordon and Berry (1993: 3) compiled opinions on environmental leadership characteristics, skills, styles and experiences. They summarised the need for knowing more about those leaders within environmentally concerned professions who shepherd our present and future citizens.

> The need for environmental leadership has never been greater. Government, business and industry, and not-for-profit organisations are all seeking solutions to environmental problems that are increasingly visible to us all. All agree that a key element in improving the environment is leadership - the ability of an individual or a group to guide a positive change toward a vision of an environmentally better future. We believe that environmental problems or opportunities are different enough from other human contexts to need a special kind of leadership.

Effective leadership in the field of environmental education is seen as crucial in order to establish environmentally sound values and problem solving abilities to sustain our earth (Thomas, 1993). Environmental leaders should strive to instil appreciation, sharpen awareness, dispense knowledge and skills about the environment, and 'set a direction' (Langton, 1984 in Foster, 1993: 13). In order to accomplish these goals, Charles (1992: vii) suggested that leaders must be able to "assist learners of any age in developing ... commitment to result in informed decisions, responsible behaviour, and constructive actions concerning ... the environment upon which all life depends".

According to Butler (1992b), professionals must be challenged to examine their own personal world views, that is, what they value and, through practical learning and deliberate self-reflection, what they believe. Strong philosophical beliefs about environmental education issues coupled with scientific knowledge may be the foundations which help environmental leaders deal with issues at both the local and global scale which are often controversial. These issues involve pollution in town rivers, community woodchipping industries and national rainforest protection, siting a hazardous waste disposal unit, determining air quality across international boundaries, balancing economic viability and environmental sustainability (Leopold, 1949; Clayton, 1982; Capra, 1983; Skolimowski, 1984; Severson, 1994; Lidstone, 1995).

There is a need to know more about the network of knowledgeable and capable environmental education leaders who act as effective agents of change. Tanner (1980), Peterson and Hungerford (1981) and Palmer (1993) have conducted research into the personal and experiential influences which initiate and develop a leader's interest in the field of environmental education. Snow (1992a) surveyed volunteers and professional leaders of non-profit organisations about their commitment, needs and career development. Others endorsed the idea that mentoring relationships play a useful role in environmental education leadership (Udall, 1986; Beeler, 1988; Roush, 1992; Foster 1993). None, however, has carried out detailed research into those mentoring relationships.

1.2 Purpose of the Study

Further research on how mentoring can be effective for leaders will be important to environmental education as it moves from being a relatively new field of dedicated amateurs to a mature domain led by knowledgeable professionals. The delivery of the message can be strengthened by the prowess of the messenger whose skills, knowledge and attitudes may be nurtured and enhanced by an effective mentor. Through a focus on mentoring, this study attempts to understand more fully the personal and professional development of leaders who have emerged from this diverse, expansive and often controversial field. More specifically, it will examine the perceived effectiveness of the mentoring relationships those leaders have experienced by tracing any 'cascade of influence' from mentors to mentorees.

1.2.1 Mentoring as an aid to leadership

Classically, according to Homer, a mentor is one who acts as a tutor, counsellor or guide for developing moral philosophy and a sense of wisdom. Today, a mentor is perceived as a guide for life who can provide information, support and feedback on both personal and professional levels (Segerman-Peck, 1991). Mentoring has been touted as a way of bolstering leadership (Levinson *et al.*, 1978; Roche, 1979; Limerick, 1992; Shea, 1992). Many fields have developed concrete ways of using the influence and expertise of mentors. In nursing, mentoring has been used to bring protégés from novice to expert status as they increase their skill level (Benner, 1984). Business has employed organisational schemata for mentoring (Segerman-Peck, 1991). Higher education offers mentoring support programs for beginning university academics (Hill *et al.*, 1988). Schools have used this process to monitor the professional development of intern teachers and administrators (Mellor, 1995) or bolster gifted and talented students (Torrance, 1984). Other research shows that those mentored in direct ways throughout their careers can become leaders who are better able to convey the knowledge, values and attitudes necessary to encourage social, political, educational and scientific action in their fields (Levinson *et al.*, 1978; Farren, Drefus and Kaye 1984; Beeler, 1988; Arnold and Davidson, 1990; Snow, 1992b). What is required of a mentor in environmental education?

1.2.2 Mentors for environmental education

Various writers have attempted to describe the qualities of leaders for environmental education (Roush, Jordan and Snow, Crowfoot, Romero, Simberloff in Snow, 1992b). Characteristics of leaders, such as integrity, having a firm knowledge base, and developing good communication and team leadership skills, should also apply to their mentors (Segerman-Peck, 1991). Furthermore, the mentors would need to be people who have been "transformed" in their world views (Fien, 1992), who "move beyond the vision" (Atkin and King, 1989), to dispense "dangerous knowledge" about controversial issues (Maher, 1986), and are capable of inspiring others to undertake "gradual personal transformation" (Capra, 1983).

For the purpose of this study, mentoring is not to be confused with short-term formal programs, peer coaching, supervisory roles, facilitation, networking, role-modelling without a personal relationship, sponsorship or other mentoring experiences outside the domain of environmental education (Showers, 1985; Burack, 1988; Byrne, 1989; Gray, 1989; Caldwell and Spinks, 1992). These mentors need not be activists inspiring a movement and its followers with a vision. Instead they might be ordinary people with extraordinary commitment to environmental education. They should be willing to disclose a personal and professional lifestyle that is based on environmental knowledge (Augros and Stanciu, 1987; Loubser, 1993) and principles (Leopold, 1949). They should fill the role of reciprocal or shared leadership giving scientific information, professional support and personal friendship to emerging environmental leaders (Gumaer Ranney, 1992; Lorenz, 1992). Therefore, understanding the characteristics of the mentors actually nominated by the leaders will be an important part of this study.

1.2.3 Mentoring of leaders in environmental education

A search of the literature (ERIC 1970-90; Merriam, 1983; Noller and Frey 1983; Gray, 1989; Limerick, 1992) revealed over 900 titles for *mentors, mentoring* and *mentorship.* Yet, when cross-referenced with *environmental education, leadership,* and *professional development,* there is minimal intersection. For professionals in the field of environmental education, mentoring has received scant attention.

Udall (1986) described the mentoring support he received from a supervisor in the natural resources field in climbing the 'leadership ladder'. Beeler (1988) summarised the process of mentoring in "Teaching Tomorrow's Leaders Through Mentoring", but did not follow through with specific research to justify her position. Foster (in Berry and Gordon, 1993: 24) suggested enlarging the pool of environmental education leaders through "scholarship assistance, internships, mentorships, and recruitment of successful professionals from other fields". Snow (1992a) only mentioned the possibility of mentoring in his book, *Inside the Environmental Movement: Meeting the Leadership Challenge,* as a method of working with volunteers in environmental groups. In his follow-up book, *Voices From the Environmental Movement* (1992b), mentoring is referred to by only three of the contributors. Roush (in Snow 1992b: 38) advocated, "Believe that you gain power by sharing it. Become a mentor, and you will strengthen both the movement and your own organisation". Gumaer Ranney (in Snow 1992b: 127) discussed her own mentoring, "... I found two mentors of extraordinary vision, knowledge, and dedication to conservation who taught me politics and professionalism". Speaking of training new conservation leaders, Lorenz (in Snow 1992b: 215) advised one to "look for those individuals with leadership potential and the skills you need, and train them early to be good leaders. Assign them to work with more experienced people who could serve as friends, supervisors and mentors". Apart from these references, little has been found regarding mentoring in the field of environmental education beyond suggesting its possible efficacy.

1.3 The Research Questions

Mentoring is mentioned only occasionally in the environmental education literature without details on how it had been accomplished in the past or details of how it might be carried out in the future. Therefore, the goal of this study was to add to this body of research by exploring the mentoring experiences of leaders during their personal development and professional careers in the field of environmental education and to understand the implications for the professional development of future leaders. In order to gain a fuller understanding of the efficacy of that mentoring, this research investigated the following major questions:

1. Have leaders been mentored at some time during their involvement with environmental education?

   This necessitated finding recognised leaders through environmental education networks and using a research questionnaire to determine their acknowledgment of mentoring.

2. What has been the timing and duration of the mentoring process?

This entailed the use of autobiographical narration to understand the leaders' personal and professional context and to explore their perceptions of the mentoring relationship on both personal and professional levels.

3. What is the effectiveness of the mentoring relationship?

   This required investigating the initiation, development and sustainment of the mentoring relationship by interviewing selected leaders in environmental education and their mentors.

4. Is there any 'cascade' or continuation of the mentoring process?

   This involved clarifying whether the experience of being mentored encourages one to become a mentor thereby enhancing the professional development of future leaders in environmental education.

1.4 Significance of the Study

Information garnered from the initial survey clarifies the concept of leadership, mentoring and professional development as understood by selected leaders across a broad range of environmental education fields. The interviews with those who had been mentored, their mentors, the mentors' mentors and new mentorees provided further data for theory generation regarding the process of mentoring and the 'cascade of influence'. This thesis thereby contributes significantly to the base of mentoring research on leaders of environmental education.

The opportunity to use participants from two countries adds to the richness of the data by highlighting the commonalities of mentoring as experienced by acknowledged leaders in the field of environmental education. The concepts generated are valid only for this group of participants, but the patterns extend across both countries. Also, the participants show many variations on the classic patterns of mentoring found in the general literature and this diversity broadens the idea of mentoring at least as it has evolved for the leaders identified in this study.

Although many mentoring studies have paired the interviews (Kram, 1983) only a few have alluded to a continuing pattern of mentoring. In his study of business mentoring, Roche (1979) described a 'ripple effect' when someone who had had a mentor was willing to become a mentor, yet no further interviewing was carried out. Mainz and Girolami (1992) and Campaigne (1993) have studied the genealogy of mentoring within chemistry communities by simply asking who was the PhD research supervisor or by using historical data as a source of confirmation. No interviews regarding the mentoring relationships were held. It is significant that this study took the opportunity to follow the mentoring experience in both retrograde and forward patterns going from a leader's mentor back to the previous mentor and from the leader to a new mentoree. The tracing of these mentoring relationships is referred to as 'linked interviewing'.

No two people in this study had exactly the same mentoring experience. However, by using a grounded theory approach which is presented in Chapter 3, the data could be compared so that the outline of the process would be recognisable by others who have been mentored and comprehensible to those practicing in the field of environmental education. Such 'generalisability' is described by Strauss and Corbin (1990: 23).

> If the data upon which it is based are comprehensive and the interpretations conceptual and broad, then the theory should be abstract enough and include sufficient variation to make it applicable to a variety of contexts related to that phenomenon.

When referring to the use of this methodology, Burroughs-Lange (1994) used the analogy that if one draws the sketch of a face clearly enough, someone will surely recognise the portrait. The theory built from the mentoring experiences of these selected leaders is designed to add to the gallery of mentoring research.

1.5 Summary

Although the structure of the thesis is designed to assist the reader with a logical flow of reporting - introduction, literature review, methodology, data presentation, and findings - it does not "reflect the actual chronological sequence of preparing the study" (Johnston, 1989: 17). In the light of the grounded theory methodology that has been used, various stages of the study have been conducted concurrently.

Chapter One provided the context for the study by giving a brief definition of environmental education and exploring the diversity of occupations and orientation within the field. It stresses that while there has been some research and writing about environmental education leadership, there have been only occasional references to mentoring as a way to enhance that leadership. However, little research has been conducted on those mentoring relationships. By answering the four research questions posed for this study, useful and important information will be contributed to the field of environmental education in respect to the mentoring experiences as professional development for leaders.

The review of literature presented in Chapter Two informs the aims of this research by providing further information about environmental education, leadership, mentoring, and professional development. It serves to elucidate the questions and descriptive themes with which the analysis of data began.

Chapter Three discusses grounded theory research methodology (Strauss and Corbin, 1990). This constant comparative approach provides a "theoretical sensitivity" which means that the perspective is focused progressively as the literature is analysed back and forth with the data collection and the analysis. It is within this dialectic context that specifically related concepts lead to theory building.

Chapter Four presents an analysis of the data derived from fifty-seven survey questionnaires obtained from acknowledged environmental education leaders. Chapter Five narrates autobiographical mentoring stories from thirty in-depth interviews with selected leaders, mentors and mentorees. A 'cascade of influence' is traced through four types of cases describing mentoring pairs, triads, chains and webs. The analysis reveals key concepts of mentoring as they are interpreted by this group of environmental education leaders.

In order to answer the research questions, Chapter Six summarises the major findings about the personal and professional development of leaders who have been mentored. In particular, it will show how the influence of mentors is based on a philosophically congruent view of environmental education which encouraged the leaders to act from a platform of self reflection. With the mentor's guidance, the leaders became effective agents of change as demonstrated through their own accomplishments and continued work in the field. It will be seen that mentoring can benefit leaders who are then better able to inculcate environmental knowledge, values and attitudes within their various spheres of influence. The understanding of these past experiences has implications for mentoring as an important part of the professional development of future leaders in the field of environmental education.

Chapter Two

2.0 Introduction to the Literature Review

In order to study the issues of mentoring, its affective and cognitive relationship to leadership and its application to the professional development of environmental educators, the researcher reviewed the literature of environmental education, leadership, mentoring and professional development. The material studied for this review included: ERIC Documents 1970-1994, the Psychological Abstracts 1970-1990, Dissertation Abstracts, and relevant journals and books published up to December, 1995.

In the first section, the investigation of the macro-context of environmental education in Australia and the United States is outlined. The current social, political, cultural and educational milieux and the relationships to new environmental paradigms which current leaders advocate for the environment (Milbraith, 1984) are explored.

It is generally accepted that strong leadership is crucial to the field of environmental education (Berry and Gordon, 1993). For this reason, the second part of the review attempts to understand the general arena of leadership and meld that information with the domain of environmental education leadership. Understanding the concept of mentoring, the influence of mentoring on personal philosophy, educational values and orientation, and the role mentoring plays in career development is highlighted in the third section.

Finally, there is a growing body of literature concerning the professional development of leaders who make reflective choices about their decisions (Butler, 1992c) and move to action learning (Revans, 1982) sometimes through the support of mentors (Caldwell and Carter, 1993). These sources give further insight into the knowledge, values, attitudes and world views held by leaders and mentors which are considered important for developing mentoring for the next generation of leaders.

2.1 The Domain of Environmental Education

This extension of ethics, so far studied only by philosophers, is actually a process in ecological evolution. .... In short, a land ethic changes the role of Homo sapiens from conqueror of the land community to plain member and citizen of it.
Aldo Leopold, Sand County Almanac, 1949

The domain of environmental education will be discussed under the framework of three headings: definitions, perspectives and variations. Once leaders have derived a personal definition of environmental education, this perspective will influence their professional work. However, as the issues of environmental education widen, there is a need for a variety of professionals to encourage all citizens to consider Leopold's plea for taking up an environmental ethic.

2.1.1 Definitions of environmental education

Environmental education is a term which has evolved through time and is defined by its origins as well as by what it has come to be. Historically, the impetus for environmental education can be traced back to writings of Plato, but it took nineteenth century educationalists such as Rousseau to advocate the importance of nature study (Irwin, 1984). In the 1920s 'outdoor education', a term anchored in the sound principle that learning takes place faster and more efficiently through direct experience, became popular (Fortino, 1977). Later on, terms like outdoor recreation, field studies, conservation education, environmental interpretation and environmental education began to be used interchangeably (Clayton, 1982). Today the field includes experiential education (Fallis, 1991), environmental science and ecology.

Although environmental science serves as the basis of environmental education, it is not seen as a discrete academic discipline like physics, chemistry or biology. Craig (1994: Forward) gave this description:

> At the moment environmental science is essentially a professional application of knowledge from many existing disciplines to the study of environment ... it does not try to educate people on behalf of any particular cause. It is not concerned with social action *per se*. It

> presents some of the knowledge necessary for a better understanding of the complex interactions between the planet and its people. ... It is hoped that improved knowledge will lead to greater care of the environment and action to bring that about.

Ecology, on the other hand, was defined by Meagher (1991:103) as:

> The range of possible interactions between all the organisms and their environments makes ecology an extremely complex science, and ecology therefore encompasses aspects of all the sciences as well as some of the 'social sciences' such as geography, politics and economics. Its limits have not been defined and may be non-existent.

Scientific views toward environmental education were linked to geography education for Australian educators by Fien (1992). Education *in* the environment includes physical education, outdoor recreation and use of the built environment; education *of* the environment involves conservation education, environmental science and ecology; education *for* the environment requires skills, attitudes and values necessary to reflect on and bring about needed social change to live wisely with environmental resources.

'Environmental education' can be seen as both an area for awareness and as an approach to learning. The term was defined in the United States Environmental Education Act of 1970 (Clayton, 1982: 31).

> Environmental education is intended to promote among citizens the awareness and understanding of the environment, our relationship to it and the concern and responsible action necessary to assure our survival and to improve the quality of life ... environmental education is a study of the factors influencing ecosystems, mental and physical health, living and working conditions, decaying cities, and population pressures.

Fien (1988:10) defined the process of environmental education for the Bicentennial Australian Studies School Project as:

> ... an across the curriculum approach to learning that is useful to individuals and groups in coming to understand the environment with the ultimate objective of developing caring and committed attitudes that will foster the desire to act responsibly in the environment. Thus, environmental education is concerned about knowledge, and also feeling, attitudes, skills and social action.

Even though the concepts of awareness, concern and action are similar in the two definitions, environmental education is approached somewhat differently in the United States and Australia. In the USA it is acknowledged to be interdisciplinary, however, environmental issues are most often taught from a science perspective. In Australia there is more emphasis on the built environment and geography is the subject that most often teaches environmental issues such as ecologically sustainable development (Department of Education, Queensland, 1992). Also, socially-critical traditions do not appear in American environmental education literature as frequently as in Australian publications (Robottom, 1984; Greenall-Gough,1990; Spork, 1992; Fien, 1993).

Hammond (1988) pointed out how different perspectives on environmental education can be translated to a school setting. He noted that most social studies teachers who deal with environmental education have never intimately engaged in effective political or social action and that the vast majority of science teachers who deal with environmental science have never conducted publishable scientific research. Yet we encourage students to become 'active and informed citizens' who engage in the process of science. Hammond (1988: 1) argued, "We rarely fully empower students to experience transformation of their vision to implemented fulfilment within the boundaries of a democratic system ... [environmental education] programs provide a rich opportunity for practicing thinking in context while acting on community problems of worth". However, he gives two cautions: never allow students to be used by any interest group as advocates for a cause and don't allow any indoctrination - always provide students with a range of views from primary sources. Agreeing with this stance, Schafer (1992: ix) described one environmental education program.

> As with all good teaching materials, *Project WILD* is concerned with providing information and helping students evaluate choices and thereby make responsible decisions. In short, our mission is to help youngsters learn *how* to think, not *what* to think. ... Our strict balance and objectivity, as well as the technical validity and education value of the materials, have gained sponsors ... representing a wide range of views on wildlife and its management.

Although there is a difference in emphasis between Australia and the United States, both countries subscribe to the nature and goals of environmental education which have been formulated internationally over the last twenty years. Recommendations and endorsements have been put forward by the International Environmental Education Program sponsored by UNESCO-UNEP (1978: 3). The declaration of the Tbilisi Conference (1977) included the following goals:

1. To foster clear awareness of and concern about economic, social, political and economic interdependence in urban and rural areas;
2. To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; (and)
3. To create new patterns of behaviour of individuals, groups and society as a whole towards the environment (after UNESCO-UNEP 1978:3).

To accomplish these goals, some of the guiding principles were: considering the environment in its totality; understanding that environmental education is a lifelong process, using an interdisciplinary approach; examining issues from local, national, regional and international points of view; and utilising diverse learning environments and a broad array of educational approaches.

That these principles are still considered important is emphasised by Smyth (1995: 9) who described the term 'environmental education' based on a Scottish strategy document (SOEnD, 1993). He listed the following descriptors:

- Lifelong
- Interdisciplinary
- Holistic
- Learner-centred
- Locally relevant
- Concentric, from local to global
- Emphasis on quality and value
- Problem formulating
- Normative rather than empirical
- Systemic rather than linear thinking;
- Affective integrated with cognitive;
- Flexible and adaptable;
- Forward-looking, anticipatory;
- Interpretive, synthetic, broadening;
- Operating in open situations;
- Issue-based;
- Field-based;
- Action-oriented.

It is difficult to offer any single explanation of environmental education. However, the essence of the many available definitions suggest that environmental education should be seen as a process rather than a product, not limited to formal educational settings, continuing rather than defined, scientifically based and sociologically concerned, resulting in both cognitive and affective changes regarding human interaction with the natural ecosystems that sustain life on this planet.

2.1.2 Perspectives on environmental education

One's personal definition of environmental education colours one's perspective toward working in the field. According to Irwin (1988: 1), the changes in environmental education over the past five decades "have evolved from a surrogate for nature conservation and a vague notion relating to a better 'quality of life', to a sophisticated concept embracing ecological knowledge and understanding, total people-environment relationships, ethics, politics, socio-biology and public participation in decision making". Roush (in Snow, 1992: 11) outlined the heritage of the movement.

> There is no right tradition - conservation, environmentalism, preservation, deep ecology, human ecology, or whatever - no single definition that fits all of this diverse and turbulent movement. Nor is it always possible to know who is outside or inside. That is partly a matter of perspective.

Underwood (1992) pointed out the need for connecting the perspectives of various groups in science, technology, policy analysis, lobbying, litigation and grass-roots campaigning when studying environmental protection issues. She argued for a cross-fertilisation between these groups and the growing body of philosophers, social scientists, academic writers and theologians who have begun to see environmental issues in terms of human behaviour and ethical terms.

Environmental ethics were questioned by Rachel Carson in *Silent Spring* (1962) arguing that our previous 'anthropocentric' view of earth created a lifestyle that has wrought havoc. She argued:

> The control of nature is a phrase conceived in arrogance born of the Neanderthal age of biology and philosophy when it was supposed that nature existed for the convenience of man. (Carson in Underwood, 1992: 56)

Smyth (1995: 4), agreeing with Carson, emphasised that as civilisation grew away from its roots, the environment was treated as an unlimited resource for those who had the power and skill. "Feedback loops which should have signalled danger were misunderstood, designed out or disregarded". He felt that it was not until the late 1960s that photographs of planet earth suspended in space gave the public a powerful image of its limited resources and "environmental education emerged as part of the response to these perceptions".

Underwood (1992: 54), among others, credited Earth Day 1970 as a springboard for a new environmental ethic "dedicated to preserving the earth's resources and species and to learning to live with them in a sustainable fashion". She described the ethic advocated by early-twentieth century conservationists as being the efficient and wise use of natural resources to serve human needs such as building dams and harvesting timber. She contrasted that with today's ethic which, she suggested, involves respecting natural resources and conserving species other than our own.

The 'preservation-conservation dichotomy' can be transcended by understanding the newer term of 'sustainability'. Roush (1992: 15) defined it as describing a system in which human societies and natural systems exist in an equilibrium that can sustain itself indefinitely. Lowe (1992: 14) offered Pearce's four criteria for sustainability.

1. There must not be unreasonable depletion of any resource.
2 There must not be significant damage to the ecosystem.
3 There must be no significant decline in social stability.
4. The sustainability of other societies must not be harmed.

Such views toward sustainability have been traced by modern theologians such as White (in Clayton, 1982: 2) who wrote: "What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs in our nature and destiny - that is by religion". Berry (1988) suggested replacing 'human centeredness' with a 'biocentric ethic' in order to sustain the various life forms on this planet.

Underwood (1992: 58) concluded her discussion of ethics by proposing three issues to be discussed:

1) The environmental problems we confront are infinitely more complex than we imagined in 1970.
2. The solutions we sought, largely pollution-control technical fixes, have had much less success than hoped for.
3. While we have become more aware of our environmental dilemma, our actions suggest that we have a long way to go in fully accepting and acting on the meaning of an environmental ethic.

That environmental ethics must be subsumed into general education was recognised by Lowe (1992: 17) who stated that the recognition of rapid technological changes has put a great deal of emphasis on "education as a preparation for the world of change". He gave two reasons for this emphasis on science education. Firstly, it provides the skills and knowledge needed for the workforce to adapt to change, and secondly, the social impacts of new technology are so profound that there should be a public involvement in decisions about them. Secondly, the desire to move toward a pattern of development which is genuinely sustainable requires a community capable of discussing complicated issues, therefore, "fundamental change to the nature of education is an urgent priority".

2.1.3 Variations in the field of environmental education

The position of the authors presented above strongly suggests that it will take more than education about environmental issues in school and university subjects such as science and geography to solve the complexity of the environmental problems that we know exist today. Our technological fixes must not only reach vertically from the truck drivers of recycling companies through the lab technicians of industry and government up to the private business CEOs, but our environmental ethic and educational endeavours must spread horizontally across a broad range of varied amateurs and professionals. It is from this range of environmentally sensitised citizen that environmental leaders can emerge.

In the early days of the environmental movement, there were few professionals to back up the work of activists or grassroots volunteers. Today the range of people involved in conservation efforts has changed. Contributors to Berry and Gordon's book, *Environmental Leadership* (1993), and Snow's book, *Voices from the Environmental Movement* (1992b), presented a fair sample of the variety of orientations to the field of environmental education. The positions represented: professors for the forest sciences departments, vice-presidents of environmental affairs for technological corporations, professors of natural resources, urban and rural planners, program officers for foundations, staff assistants for government agencies, directors of special projects like the Conservation Fund, technical writers, environmental mediators, superintendents for departments of parks and recreation, professional conservationists for industry and non-profit organisations, ecologists, and presidents of non-profit environmental research organisations.

Looking at the volunteer aspects of environmental education, *Inside the Environmental Movement* (Snow, 1992a: xviii) summarised some future needs of this broadening profession.

> The results of our extensive survey and the comments of the eminent volunteer advisory panel for the project - representing government, academia, industry, philanthropy, and non profits - told us something more. They said that the leaders and managers needed for the future represented a new profession for which there was no established training, no university curriculum, no career path, and few standards. In short, we had ignored development of our most important asset - human capital.

Smyth (1995: 14) defined the new environmental educators as "professional or amateurs, in formal or informal programs, full-time or part-time, as a distinct activity or as a dimension of something else together with their back-up of researchers and developers".

2.1.4 Synopsis of the domain of environmental education

Beyond ideals, ethics, science and social concepts, the literature suggested that the environmental movement must make full use of its 'human capital'. Books have been written by and about the 'greats' in environmental education like Aldo Leopold and John Muir. The notoriety and accomplishments of activists such as David Brower in the United States and John Sinclair in Australia are documented in government reports. Daily media reports keep the current leaders of the 'greens' in the news.

However, there is a lack of research regarding the lesser known leaders in the environmental movement. The American Conservation Fund (Snow, 1992a) has begun to bridge this gap. Their findings recommend that future leaders and followers in this new profession must become conversant with law, natural sciences, public relations, communications, human relations, resource management, marketing, fund-raising, and business management. Noonan (1992: xix) remarked that "in spite of the lack of training, funding and recognition, the accomplishments of the movement have been remarkable". The challenge from the

Conservation Fund is to address the organisational, educational, and financial aspects of environmental education with better training, new partnerships, new resources, and new research into human resources.

One way to meet the environmental education challenge may be to probe the contextual background and careers of those who have become leaders. This new area of research into the human dimension of the environmental movement can probe issues of leadership, mentoring and professional development. These topics will be discussed further in the next section.

2.2 The Arena of Leadership

Reflection without action is verbalism; action without reflection is activism.
Freire (1970 ,in Codd, 1989)

2.2.1 Definitions of leadership

Leadership is a term which embodies both practical and philosophical aspects. Decades of academic analysis have given us over 350 definitions of leadership and thousands of empirical investigations reflecting fads, fashions, political, historical and academic trends (Bennis and Nanus 1985; McManus, 1990). Leadership is much easier to define in terms of corporate management where one examines efficiency and productivity (Smyth 1989), rather than in education where critical reflection, personal autonomy and collective deliberation are valued (Codd, 1989). Grob (1984: 269-70) suggested that:

> ... leadership, *more than any other kind of human activity*, must demand of its practitioners a willingness to open themselves to critique ... leadership must be born - and perpetually sustained - in so far as leadership is the work of humans who are moral agents - it must root itself in ... humility. ... Without that willingness to examine one's life, alleged leaders ... must, of necessity, become identified with their purposes which inevitably congeal into fixed doctrines or dogma.

According to Grob, the notions of self-reflection and openness to change are vital for leaders involved in the field of environmental education. The wellsprings of that leadership can be voluntaristic (Burns, 1978) or recognised by virtue of 'charisma'. Foster (1986: 187) explained that:

> ... leadership can spring from anywhere; it is open to shared leadership roles; it is not a quality that comes with an office or a person. Rather it derives from the context and ideas of individuals who influence each other. ... Leadership is an act bounded in space and time; it is an act that enables others and allows them, in turn to become enablers.

The literature listed various types of leadership which are appropriate to the different orientations of environmental education. These are distinguished here by their purposes, and include:

Business leadership - values profits, corporate image, group management, goal setting; organisational position, superior rank; goals driven by organisational needs; role of motivating is for increased productivity; task responsibility is allocated by management; task specific results (Foster, 1986);

Educational Administrative Leadership - looks toward efficiency, accountability, effectiveness, group management, goal setting (Smyth, 1989);

Educational leadership - involves political and moral values, challenges the structures of control, challenges relationships, develops dialogue goal defining; possibilities of social change (McManus, 1990); and

Political-historical leadership - embraces dimensions of power and politics and may be typified by the leadership of Gandhi, Roosevelt, Lenin and Hitler (Burns, 1978).

Foster (1989: 44) stated that a strong assumption in business is that leadership only occurs as a result of position. Top executives control their organisations through the manipulation of power designed to make individuals perform (task) and feel good about performing (consideration) at their level of competence (maturity). He cautioned that bureaucratic management should not be confused with leadership.

Concentrating on educational leadership, Smyth (1989) argued that people in schools can help one another to uncover meaning in what they do, thereby encouraging them to change, improve and transform their own practice. If one provides others with a sense of understanding where they have come from, what they are doing, and where they are headed, then people can extract the meaning and take appropriate action. However, Smyth (1989: 190-1) also forewarned that:

> those who lay claim to be the visionary thinkers in schools must be prepared to analyse their own intentions, lest they become manipulative. ... If leadership has little to do with hierarchical imposition, then it has a lot to do with enabling the 'best' ideas to emerge wherever they come from, through a process of informed and rational debate.

With philosophical debate at the centre of social action, the educational leader is more than a detached spectator. Foster (1989: 42) extended his definition by saying that leaders can enter into a 'corridor of belief' with their followers and open various doors for them through a dialectical relationship involving mutual negotiation and shared leadership roles. These leaders, like other practitioners, must interpret their social world and cannot avoid holding theories about the nature of that world. Codd (1989: 161) felt that educational leadership should be self-reflective and proposed that personal theory comes from three sources:

1. the study of conceptual knowledge - formal education;

2. habits, convention and intuition, derived from personal experience and common sense; and

3. a philosophical critique of your own practice in which deliberative action is derived from a combination of the study of public domain 'extant theory' and private domain 'common sense' which together leads to 'liberated thoughts'.

In environmental education, like other fields, the need for self-reflective leadership may be overridden by the necessities of managerial leadership. Foster (1989: 45) expressed the following criticism:

> What essentially has happened is that the language of leadership has been translated into the needs of bureaucracy ... the concept has been denuded of its original power; 'transformational leaders' (Burns, 1978) are now those who can lead a company to greater profits, who can satisfy the material cravings of employees, who can achieve better performance through providing the illusion of power to subordinates.

Bennis and Nanus (1985: 3, 21) did not agree with this criticism when they interviewed ninety business leaders whom they felt achieved "fortunate mastery over present confusion - in contrast to those who simply react". Their view of 'transformational leadership' is summarised under three major headings: commitment, complexity and credibility. Leaders must be committed to instilling vision, meaning and trust in their followers. They must deal with diversified organisational structures that are much more complex than single business interests or hierarchical power structures of old. Because the public sector has grown more vociferous in the last fifty years, leaders must be seen as credible to various pressure groups such as welfare, social services, health, education and environmental organisations. Four major tactics for leadership emerged from their extensive interview data:

Strategy I: attention through vision - an intense commitment to outcomes which inspires confidence in followers; by bringing out the best in each other, a vision external to the leader's own actions can be fulfilled;

Strategy II: meaning through communication - the ability to relate a compelling image for the future which induces enthusiasm and commitment in others, organises meaning for followers and makes explicit a shared meaning;

Strategy III: trust through positioning - this characteristic implies accountability, predicability, reliability and integrity; leading requires that one knows where one is taking oneself, the leaders' behaviour exemplifies their ideals in action; and

> Strategy IV: the deployment of self through (1) positive self-regard and (2) the Wallenda factor - recognising personal strengths and compensating for weaknesses allows the leader to have self-respect; the capacity to keep learning by nurturing of skills and discipline; the Wallenda approach to setbacks is to see failure as a beginning, a springboard of hope, and an opportunity for learning.

Debate about the meaning of good leadership takes place not only within business and government institutions, but also at the academic administrative level. Carraway (1990) examined the leadership of college presidents and found that exemplary leaders relied on respect rather than popularity. She defined six attributes of transformational leaders: having good communication skills, promoting mutual rewards between leaders and followers, handling power with care, decision-making abilities, becoming a positive force, and articulating a winning mission.

To become a visionary leader, Foster (1989: 43) called for critique of leadership skills:

> Critique is not only a result of leadership practices but is constitutive of those practices: leadership always has one face turned toward change, and change involves the critical assessment of current situations and an awareness of future possibilities.

Environmental education must be concerned with future possibilities. There is a need for transformational leaders like those found in business, education, administration and government. These future leaders must be self-reflective about their own ethics, be grounded in sound social and scientific knowledge, and be able to assess the current needs of the field. They should be aware of future possibilities and have the ability to enable others to commit to a shared vision of ensuring long term environmental quality for future generations. Langton (1984: 5) concluded that "in the future, environmentalists need to be as concerned about the state of leadership of the environmental movement as about the state of the environment".

2.2.2 Leadership and environmental education

Conservation began as a hobby and became a profession. *Stephen Fox, 1981*

In order to deal with an astounding complexity of contemporary conservation issues, environmental education has grown substantially in the last twenty years from a field of amateurs to one of professionals (Langton, 1984; Gumaer Ranney, 1992; Noonan, 1992). It is important to understand how leadership has responded to this change.

Lemons (1985: 244) declared that the "resolution of environmental problems requires the development of environmental values and planned change (leadership) of individuals and societal behaviour which reflects such values". He said that as a consequence of this, many liberal arts colleges in the United States were becoming interested in environmental leadership programs. This being a new development, he felt that the definition of environmental leadership was not well defined. Therefore, he described several conventional approaches (Carter 1993) for the teaching of values and skills applicable to environmental leadership:

Classical - Ideas, values and skills are presented in an objective manner emphasising theoretical rigour and historical depth, content rather than application;

Experiential - Leaders should be trained in specific active arts and skills that develop moral character for leadership; academic knowledge assists students to analyse social issues and reach informed ethical positions, and act in socially responsible ways (Plato, Dewey);

Growth Oriented - Values and leadership questions are examined in the context of a student's own immediate world (Jung);

Developmental - This approach emphasises theory and assumes leadership behaviour is predicated upon theoretical abstraction and information (Piaget, 1965; Kohlberg, 1971);

Pre-professional - Students are acquainted with values and leadership issues as a transition from the academic world to their professional world; and

Inculcative - This approach, while examining a variety of values and leadership positions, nevertheless assumes a specific set of values.

Lemons (1985: 245) conceded that these conventional approaches "facilitate development of analytical and cognitive abilities, verbal and quantitative skills, familiarity with Western thought, knowledge of academic discipline, and technical problem-solving skills". However, he thought there was one major deficiency. Although students examined the issues, there was not adequate provision for them to test those ideals and values against personal experience.

The author offered examples of alternative approaches for teaching environmental leadership. The Sierra Project from the University of California was organised around the topics of survival skills, social perspective-taking, community building, conflict resolution in society, life and career planning, socialisation, and community service. Alverno College in California focused on competencies for leadership: awareness of self-reflection, understanding the conceptual foundations for making values and leadership judgements and decisions, inferring and analysing values implications, particularly in different cultural setting, and focusing on values from a holistic perspective. Lemons evaluated this program saying, "increased student autonomy and participation in community implied that the equalisation of teachers and students represented a major academic organisational change". He concluded that the values and skills necessary for environmental leadership need to be tested against experience, or they cannot be said to be fully developed.

There has been little research into what prompts one to become active in the field of environmental education in the first place. In 1979 van Matre suggested that affective learning in early childhood might be the necessary basis on which to build more complex environmental ideas. Tanner (1980: 20, 24) called this a "new research area" and looked into the significant life experiences of "active, informed citizen conservationists". Before commencing his study, he examined biographical and autobiographical statements from noted conservationists such as Brower, Dubois, Leopold and others to look for some beginning hypotheses. He found similarities in their lives based on "many childhood hours spent alone or with a few friends in a more or less pristine environment which, in some cases, was lost to commercial development".

Tanner (1980) chose for his study professional and chapter officers of four selected citizen groups - the National Wildlife Federation, the Nature Conservancy, National Audubon Society and the Sierra Club - which dealt with a wide range of environmental concerns, but historically had their roots in the preservation of wildlife and wild places. In trying to identify the formative influences which led people to choose conservation work, major categories of influence emerged which were: outdoors, habitat, parents and teachers.

According to Palmer (1993), Tanner's data supported his hypothesis from earlier research, that is, children must first come to know and love the natural world before they can become informed citizens who are concerned enough with its care to take appropriate action. Tanner concluded (1980: 24) "the implications of this study for further research and for educational practice are not only numerous - they are urgent".

Peterson and Hungerford's (1981: 113) research had similar findings to those of Tanner. However, they extended his major categories by reporting that sixty-four percent of their sample of professional environmental educators indicated non-familial role models as an important variable affecting their environmental sensitivity. They indicated that:

> role models appear to be equally important as outdoor experience in developing environmental sensitivity ... Teachers constituted the greatest percentage of role models named, stimulating interest in environmental systems and providing educational and professional guidance. Oftentimes, the teachers developed a close friendship with the participants.

Following up on Tanner's research ten years later, Palmer (1993: 28, 30) found that published analyses of autobiographical data on formative life experiences of environmental educators were still unavailable. She, therefore, undertook a study to identify those formative influences that guided conservationists toward choosing a career in these areas. Her study examined various categories of influence on the development of environmental educators' knowledge and concern and the ways in which they may change through time.

She confirmed that her sample was a group of active and informed environmental educators or those working in related fields. She summarised their activities such as practical conservation, recycling, membership in environmental organisations, curriculum development in environmental education, outdoor activities, and reading books and articles on environmental issues.

Palmer's results replicated Tanner's findings, but also reinforced them by using a much larger sample with subjects from different continents. The most important category was again 'outdoor experiences' with the second largest category as 'education courses' divided into higher education and school courses. She felt that the apparent impact of higher education courses in environmental subjects is encouraging, but that "the most disturbing fact emerging from the data was that there was not one reference to a school course below A-level (year 13) as a single most important influence". This may be accounted for by comparing Peterson and Hungerford's (1981) results where students referred more often to the individual teacher rather than the course title. She hoped that "the data gathered in this research project may help persuade those who control school budgets and curriculum development programs that a wealth of positive experiences in outdoor habitats is crucial to the personal education of all young people"(1993: 30).

Interestingly, Palmer noted, "many participants referred to the great influence that teaching about environmental issues or doing environmentally related work has had on their lives". That finding is important to this study because many of the participants were educators who moved beyond personal environmental interests to become leaders for environmental curriculum projects.

Like Palmer, Wilson (1995: 308) suggested that an 'ecological autobiography' was a useful tool for understanding one's personal and professional actions toward environmental education. She stated:

> A review of the literature indicates that autobiographies focusing on 'the ecological self' (ie, the self in relation to the natural environment) are rare. The development of

> such, however, is recognised as having potential for enhancing an understanding of one's self and the human-Earth relationship.

Wilson built on the ideas of Paschal (1960) arguing that autobiography is based on one's inner self and that "individuals in the process of developing an ecological autobiography must be willing to seek and share an important part of their spiritual identity". Wilson (1995: 309-312) explained the model of Krall (1988) for writing an ecological autobiography. This five step process of integrated flow includes: venturing, remembering, comprehending, embodying and restoring.

'Venturing' requires one to reflect on nature-related experiences which are recalled as 'vivid memories'. The 'remembering' stage involves selecting experiences from the past and releasing them to critical reflection. The 'comprehending' stage allows one to search for major themes in one's life and to compare them with those of others either through self-reflection or reading. 'Embodying' integrates what has been learned from others "with his or her own experiential matrix". 'Restoring' involves weaving an analysis and interpretation into a personal statement which reflects one's current beliefs and values. What Wilson does not suggest is the next logical step in this process, that is transmitting one's ideas about the environment to others. In this research, that transmission will be seen to be effected through the mentoring relationships.

Newhouse (1990: 31) also recognised that "one of the most understudied questions is what makes conservationists so avidly concerned about the well-being of the planet. What life experiences have triggered their devotion to this cause?" Significant life influences may predispose adults toward environmental sensitivity, but, to become a leader, that knowledge and concern must be put into action. She identified four factors which have a positive influence on environmentally responsible behaviour, including an internal locus of control, a strong sense of responsibility, a solid understanding of the issues and action strategies, and a positive attitude.

Snow (1992a: 42) found evidence of Newhouse's characteristics in a typical chief executive officer (CEO) of non-profit environmental organisations whom he characterised as:.

> He traces his interest in the environment back to the early years of his life. As a child, he loved the outdoors and had a parent or teacher who acquainted him with the beauties of nature and instilled in him a deep ethic about the principles of conservation, ecology, and environmental protection. It is this ethic - not careerism or the quest for power or the desire to use environmental issues as a means to effect broad political change - that lead him into his work and continues to refresh him.

The information from the above authors relates to some of the autobiographical information collected for this research and aids in understanding how the contextual background of the participants is related to their leadership activities in environmental education. Roush (1992: 4) gave two additional reasons for needing to explore the basis of environmental education leadership.

> First, this is a movement accustomed to extraordinary leadership. The pantheon is awesome: the legendary elders John Muir and Gifford Pinchot; Bob Marshall, the wilderness maker, Aldo Leopold and Rachel Carson, who turned science into ethics; the majestic troublemakers, from Rosalie Edge to David Brower; the policy makers, from Teddy Roosevelt to Stewart and Morris Udall.
>
> The second reason we have focused on leaders is paradoxically, that permanent change in the twentieth century United States has always been effected by groups. Some [leaders] are charismatic public figures, while others shun public notice but still lead their groups with skill and passion. Some are not even the titular leaders of their organisation. These leaders will make the decisions that make the groups that make or break the environmental movement. For every public Bob Marshall, there have been hundreds of unrecognised but effective leaders.

Effective environmental leaders are often found working quietly in voluntary positions. In 1989 the Conservation Leadership Project conducted a major study of the practices of environmental leaders to investigate the characteristics, conditions, and needs of volunteer and professional leaders of non-profit organisations in the United States. Two books resulted from the survey, interviews and subsequent essays. *Inside the Environmental Movement* (Snow, 1992a) described the inner workings of the environmental movement and *Voices from the Environmental Movement* (Snow 1992b) sought to understand such external forces as values, traditions and taboos which may be exerted by politics, economics, government, science and technology. The inclusiveness of this field is summarised by Snow (1992a: 6).

> Indeed, a healthy conservation movement will continue to be a volatile mixture of amateurs and professionals, youth and old age, dedicated volunteers and equally dedicated careerists. There is nothing wrong with the impulse and passion to want to be a conservationist for life, and to be paid and respected as a professional in pursuit of a conservation career.

However, there may be a conflict in environmental leadership between dedicated amateurs and the professionals whom Snow referred to as 'savvy insiders' who can get things done. Reed (1992: 51) argued that we cannot do without the new professionalism that many environmental groups have worked so hard to acquire, but, on the other hand, we must encourage the commitment of the informed generalist. This dilemma is highlighted by the data from the Conservation Leadership Project (1989) which indicated that over half of the environmental organisations in the United States have no paid staff and rely solely on volunteers. The question this raises is whether these volunteers will be driven out by large conservation groups which have access to professional fund raising techniques, sophisticated technology and technical expertise.

Historically, environmental education has been represented by men in the organisation milieu. Snow (1992a: 42) found in his questionnaire that the 'average' CEO of a non-governmental conservation agency was a forty-five year old white male with a bachelor's degree from a major American university who had been in a leadership position for five years. He stated, "he has broad executive powers and is responsible for the overall direction, planning, management and vitality of his organisation. Chances are he is also the principal fund-raiser and serves as well as a part-time writer, editor, and public relations officer".

Gumaer Ranney (1992: 110) outlined the historical roots of women in conservation, but, importantly, questioned the shortage of women in large national and international conservation organisations today, which contrasts to the number of women leaders in local organisations, especially those fighting public health issues. She described effective environmental leadership as "essentially about making a difference. It is the ability to see a clear vision of the future and express that vision in a way that others can embrace. The ultimate goal: to shift ideologies and actions and steer history". Applying this concept to women, she argued:

> It is extremely important for women to look much more closely than men at their own personal socialisation process in relation to leadership positions in conservation. A cause-related profession, conservation demands a steady, deep resolve and inner grounding in order to survive the hurdles and make it through and around the male hierarchy. Self-examination can make the difference between being a 'sustainer' or becoming an 'achiever,' between taking the well-beaten path or choosing 'the road less travelled'.

Gumaer Ranney (1992: 130-32) cited three key elements for environmental leadership offered by Thurber and Kaufman (1987): vision, frequency of interaction with constituents and co-workers, and metaphors, particularly, Buckminster Fuller's metaphor of "Spaceship Earth" which transformed the perception of human relationships to one another and to our planet. Finally, she suggested twenty guideposts for women interested in conservation leadership, including the six listed below.

1. Be passionate about personal commitment to conservation.

2. Develop an attitude of adventure and willingness to take risks; be flexible.

3. Develop a worldview; live by the metaphor acting locally but thinking globally.

4. Maintain a fine-tuned balance between intuitive knowledge and intellectual knowledge.

5. Identify women conservation role models such as Bruntland, Fossey and Eleanor Roosevelt.

6. Avoid advanced technical specialisation; integrators and generalists who are also inspirational leaders will be the future trimtabs and captains; experts can always be found to fill in the gaps.

Earlier, Langton (1984: 9) had forewarned that "it is unrealistic to expect any environmental group to be able to develop competency in more than a few areas of environmental concern. Therefore, it is important that environmental organisations develop imaginative organisational procedures for ensuring adequate scientific and technological assistance". Simberloff (1992) agreed that the person leading a conservation organisation is not likely to be a scientist, but recognised that the scientific issues may be quite complex. Therefore, he described the need for scientific integrity to underpin an environmental leader's position. He advocated that leaders should have multiple lines of communication with the scientific community because at times there may be conflicts of interest. He advised against accepting scientific advice without questioning it, yet felt that when environmental leaders are wondering if they are doing the right thing, they have only two things to fall back on: an ethical compass and honest science.

Gordon and Berry (1993: 3-4) acknowledged that in seeking solutions to environmental problems be they scientific or social, "rapid accomplishment and change are often important goals for environmental leaders, but they are rarely sufficient criteria for judging environmentally effective leadership". They defined environmental leadership by relating it to five key characteristics of environmental problems: "long times to solutions; complex systems; an emotion-charged context; a relatively weak and scattered science base; and an absolute need for integration across a wide array of areas of knowledge and human attitudes and concerns".

From a study using an adult rural population, Mahony (1995: 15, 21) distinguished four points of view towards the land which he called Men of the Land, Earth People, Other Agenda Folk and Unaligned Individuals. He argued that these positions were "personally constructed, habitual, affective and culturally conditioned". He pointed out that when government wishes to address problems such as land degradation and declining water supply in a non-formal pathway, they are better off using an interpretivist rather than a positivist paradigm.

> The Wollombi study portrays rural landholders as having 'special' ways of knowing (or positions) with regard to the land. These are contextual, holistic, intuitive, experiential, value-laden and behaviour oriented. This contrasts with traditional assumptions of environmental education about a definable body of 'correct' knowledge that is transferable, reductionist, reasoned, expert-derived and essentially separate from attitudes and behaviour.

Mahony (1995: 24) argued that skilful environmental education leadership is needed to reach agreement among those in informal settings having "implacably opposed positions". He described a successful attempt by a community based Australian Landcare Group to formulate an action plan to deal with a local environmental problem, but he noted "perceptive leadership is desirable but cannot be guaranteed".

As environmental leadership changes toward a more participatory and open model, Roush (1992b: 17) tendered the idea that leaders must empower their followers by giving voice to their aspirations and by instilling in them the confidence that they can do great things. He summarised these leadership traits from interview data from the Conservation Leadership Project (1989):

> We found many personalities, but we also found three constants: effective leaders are thoroughly committed to the cause, they understand their followers, and they understand their political and cultural environment.

However, the author also pinpointed three areas of conflict for future environmental leaders as shown schematically in *Figure 2.1.*

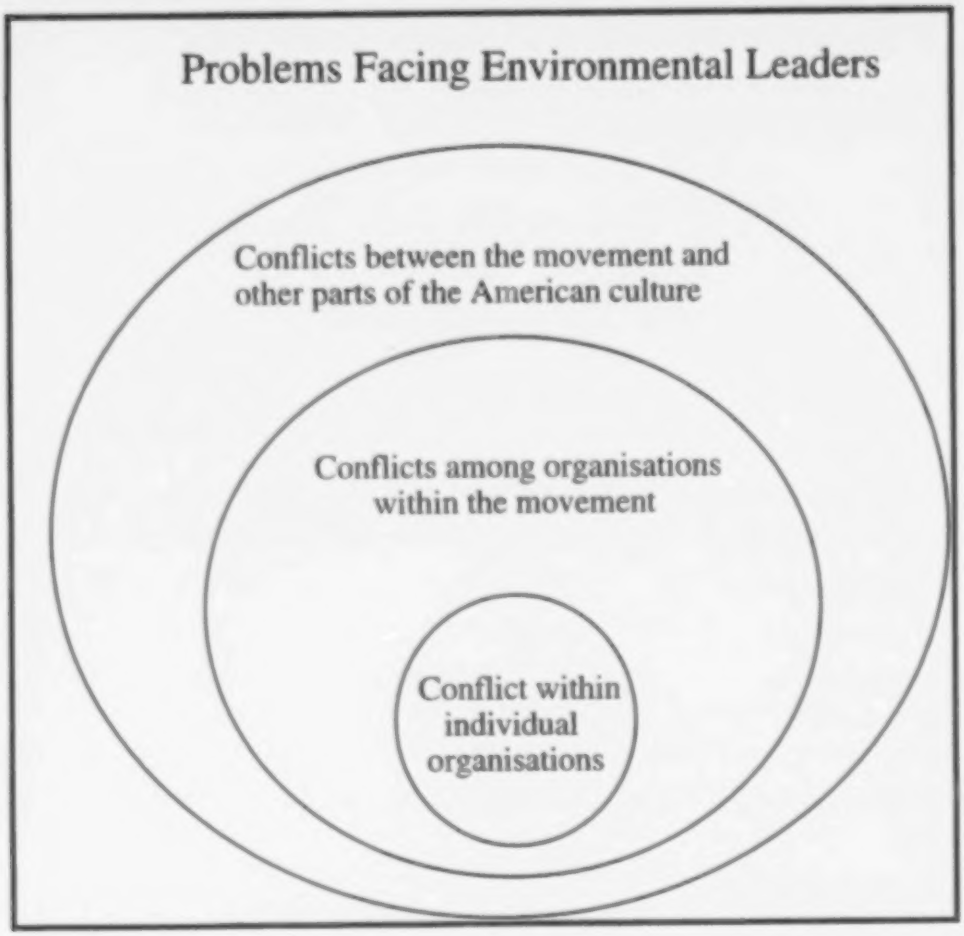
Problems Facing Environmental Leaders
Conflicts between the movement and other parts of the American culture
Conflicts among organisations within the movement
Conflict within individual organisations

Figure 2.1 The depiction by Roush (1992) of three types of conflict faced by environmental leaders.

Roush (1992: 17-18) noted that environmental leaders will need to accommodate change by dealing with conflict within and without their organisation. Rather than eliminate conflict, they should work toward making it more systematic, deliberate, and coordinated. Noonan (in Snow 1992b: x) advocated that the real strength of the conservation and environmental movement, at least in the United States, came from its diversity which gave it a broad range of practical solutions to a wide variety of issues. Acknowledging that we need the best and brightest to provide capable leadership, he pointed out another area of concern.

> There are no forums where volunteers and professionals can share ideas, where land conservation specialists can meet solid waste campaigners, where air quality can meet water quality. There is no place where politicians can find a constituency, no marketplace for funders, and most importantly, no platform for a continuing dialogue between economic and environmental interest.

Inclusive rather than exclusive partnerships based on debated environmental ethics should be the focus of future leadership efforts. Gordon and Berry (1993: 270-274)) distilled six insights about this topic from the contributors to their book, *Environmental Leadership: Developing Effective Skills and Styles.* These are summarised below.

Point 1. Be a leader *and* a follower

•Foster (13-30) concluded environmental leadership is not dependent of status, office or popularity.

•Espy (200-210) showed that in small non-profit conservation organisations, rapidly changing situations call for quick shifts in the leadership skills exercised.

•Crowfoot (250-251) said that shared power is critical to environmental leadership especially in academic organisations because of the extreme variety of specialisations and an increasingly interdisciplinary problem-solving approach.

•Webster (104-122) stressed the increasingly diffuse and participatory nature of environmental leadership which requires team thinking and cooperation with followers.

•Schmidt (185-199) illustrated the structural constraints imposed by 'one country, one vote' international governance regarding environmental issues.

Point 2: Think about Change

•Brown (211-22) maintained that environmental excellence, including both compliance and prevention, has become a bottom line objective for corporate America.

- Sirmon (165-184) pointed out the changing concept of 'natural resource management,' particularly as it applies to the USDA Forest Service, and now includes 'ecosystem management' and 'sustainable development'.

Point 3: Develop Breadth and Flexibility

- Lyons (90-103) recognised that a multiplicity of disciplines is needed to understand and solve environmental problems and he noted that leaders will be those who seize the opportunity created by luck and timing.

Point 4: Learn to Listen

- Carothers (145-164) stressed that anticipating and preparing for difficult environmental issues before hand, leads to successful use of communication skills, in particular, listening.

- Jenson (252-269) suggested improving communication between grant seekers and grant makers by outlining goals and expected outcomes.

- Perry (46-66) offered the notion of 'ritual space' so that participants can leave their dogma at the door and enter with a mindset toward mutual communication. This is seen as a way to avoid an adversarial role which will create polarisation.

- Tice (67-89) advised groups involved in conflict management to engage in 'kitchen talk', listening to the audience about the environmental problems, rather than telling the needed solutions.

Point 5: Set an Ethical Example

- Olson (123-144) examined the problems that can arise when volunteer boards and paid staffs in a non profit conservation organisation differ about raising money.

- Thomas (31-45) urged personal commitment to the environment and a profound sense of mission as being best expressed by example in work-a-day actions.

Point 6: Be a Lifelong Learner

> Most of the authors discussed the need for continuous personal and intellectual growth with frequent career changes seen as a routine component of the informal education process so often part of the environmental field. Many of them tried a variety of roles and jobs and acknowledged that the paths to their current position have been anything but precise and planned. Gordon and Berry concluded that perhaps it is these career changes which prepare one to expect change and thus prepare one for leadership.

The six salient points from Gordon and Berry about leadership and environmental education were useful to this study in developing a conceptual framework from which to examine the mentoring experiences of leaders. It focused the researcher's analysis in the following ways: understanding if the participant's leadership positions were ones of status or of influence; interpreting their views of shared leadership; comprehending their idea of 'knowledge' for the field; and discerning their personal commitment to the environment. Finally, it authenticated the need for the frequent career changes reported by the participants of the study.

2.2.3 Synopsis of the arena of leadership

The literature has suggested the preparation of environmental education leaders may begin with childhood experiences, can be developed through formative influences such as teachers and university courses, can be acted upon in volunteer settings which may, in some cases, lead to a career as an environmental leader. Leadership may be fostered in a recognised position of organisational power or in an unrecognised, but effective grassroots situation.

Environmental leaders must embody the best qualities of leadership: commitment, values, decision-making skills, vision, communication and making meaning for followers through shared leadership. However, the educational and managerial aspects of environmental leadership must be distinguished. An effective environmental leader is more than a good facilitator of learning or an agent of socialisation. He or she is a person who embodies a fundamental philosophy of environmental values.

Since leadership is more than goal setting and achievement, environmental education leaders must see personal growth as another dimension of their personal philosophy. Hersey and Blanchard (1982: 84) reminded us that "leadership involves accomplishing goals with and through people. Therefore, leaders must be concerned about human relationships". In that light, environmental education should aim toward Foster's (1986: 445) definition of transactional leadership, that is "the ability of individuals to envision a new social condition and to communicate that vision to their followers. The leader must both inspire and transform individual followers so that they too develop a new level of concern about their human condition and, sometimes, the condition of humanity at large". Following the precepts of Bennis and Nanus (1985: 3), an effective leader for environmental education would be "one who commits people to action, who converts followers into leaders, and who may convert leaders into agents of change". Understanding the role of mentoring in this process is the subject of the following section.

2.3 The Sphere of Mentoring

In Alice in Wonderland (Lewis Carroll) the child inquires which way she should go and is told, "That depends a good deal on where you want to get to".

2.3.1 Definitions of Mentoring

To understand mentoring, its influence on personal philosophy, educational values and orientation, and the role mentoring plays in subsequent career actions, one can look at the literature which has accumulated over the last twenty years. Over 900 articles about mentoring have been published since 1975 (Segerman-Peck, 1991). Although explanations of the terms 'mentoring' or 'mentorship' vary, the following definition is typical.

> Mentorship is an intense relationship calling for a high degree of involvement between a novice in a discipline and a person who is knowledgeable and wise in that area. The mentor gives advice, support and counsel (May *et al.*, 1982: 23).

Mentoring has also been defined as a management phenomenon which can be critical in the career development of young, ambitious professionals. Industry and educational administrations advocate aiding effective job performance and transition into the culture of the workplace as goals for mentoring (Levinson *et al.*, 1978; Roche, 1979; Zey, 1985). Byrne (1989: 10) described mentorship as "an active process of positive sponsorship by older 'patrons' (teachers, managers, trainers, counsellors, more senior women staff etc.) towards younger or less experienced staff, students or trainees".

Using in-depth interviews of twenty-five top level business women executives, Hennig and Jardim (1977) found that all had had a male mentor who was also their boss. The relationships were long-term and intense, but not sexual. Some women researchers (Kram, 1983; Bowen, 1985; Noe, 1988; Heywood, 1992; Limerick, 1992,) have been critical of the fact that mentoring is conceptualised as arising out of male experience within hierarchical organisations.

Definitions from mentoring research on male, female and cross-gender pairs have been summarised by Smith and Paris (1992: 1) as being a relationship involving a natural and long-standing affinity that is mutual and comprehensive, rather than a temporary, narrowly focused role assignment arranged for an express purpose of occupational socialisation or professional advancement. The relationship must have both professional and personal aspects for the mentoree and the mentor.

Anderson and Shannon (1998: 41) argued that most definitions of mentoring are too vague and that to develop teacher mentor programs without first conceptualising mentoring is to "run the risk of developing programs that are incomplete, lack integrity, and duplicate programs that in some form have already been tried". They proposed that mentoring is a process that is styled by a set of dispositions displayed by the mentor. A good program in their estimate must capture the essence of mentoring. Their model proposed that if mentors opened themselves to protégés by expressing care and concern, then mentoring could lead to a mutually beneficial mentoring relationship as shown in *Figure 2.2.* Their model suggests that the mentor would also find satisfaction through the protégé's success and perhaps benefit from a reciprocal caring.

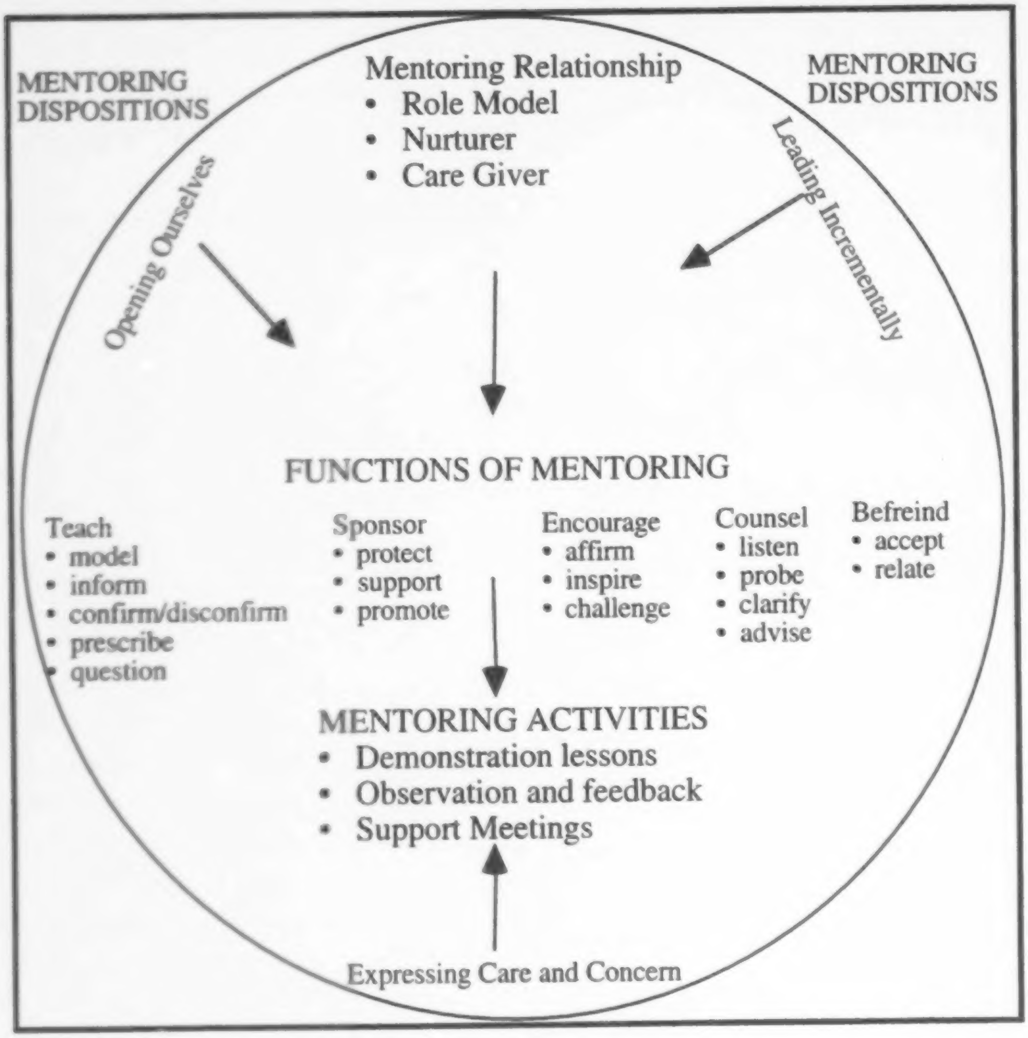
MENTORING DISPOSITIONS
Mentoring Relationship
• Role Model
• Nurturer
• Care Giver
MENTORING DISPOSITIONS
Opening Ourselves
Leading Incrementally
FUNCTIONS OF MENTORING
Teach
• model
• inform
• confirm/disconfirm
• prescribe
• question
Sponsor
• protect
• support
• promote
Encourage
• affirm
• inspire
• challenge
Counsel
• listen
• probe
• clarify
• advise
Befreind
• accept
• relate
MENTORING ACTIVITIES
• Demonstration lessons
• Observation and feedback
• Support Meetings
Expressing Care and Concern

Figure 2.2 Anderson and Shannon's model of mentoring dispositions (1988).

Mellor (1995: 231) found this sense of mutuality in her grounded theory study of mentoring for beginning high school teachers.

> Not only does mentoring build the 'quality' teachers of tomorrow, but affords much job satisfaction in a profession which suffers from attrition precisely because teaching for an increasing number constitutes stress and burnout. The collaboration and collegiality of mentoring is one way to celebrate teaching and to ensure that the 'buoyancy' vest is always there.

In summary, mentoring has been described as a dynamic relationship willingly entered into by two people, open to the possibility of growth and change on the part of both the mentor and the mentoree which may lead to a mutually satisfying association involving trust, support, counsel and friendship.

2.3.2 Mentors

2.3.2.1 Definitions of mentors

A mentor is one who from the early Greek mythology of Homer's *Odyssey* has been known as a tutor, friend and adviser. This relationship is characterised by Telemachus, the son of Ulysses, and Mentor, an old and entrusted friend of his father. Homer tells us little of what transpired between Mentor and the child, but describes the encounters with Athene, who is disguised in the form and voice of Mentor. It is she who persuades, gives authoritative instructions, intervenes, even takes over when necessary, leading Telemachus to mature in courage and action (Cochran-Smith & Paris, 1992).

Sheehy (1981: 206) gives a modern definition which shows many similarities:

> A mentor is a trusted friend and counsellor, usually from ten to twenty years older, who endorses the apprentice's dream and helps in a critical way to guide him or her toward realising it.

Today the role of the mentor has not been consistently defined and appears to overlap terms like role model, coach and preceptor (Shandley, 1989; Donovan, 1990). The persona of Athene, described above, seems closer to the current definition of a 'role model', that is, someone we identify with because of common interest, seek to develop their range of skills and knowledge, and alter our professional behaviour to imitate successfully (Shapiro, Haseltine & Rowe, 1978; Torrance, 1984; Byrne 1989, Bidwell and Brasler, 1989; Segerman-Peck 1991; Plucker, 1993). Role modelling can be a primarily passive process (Bidwell and Brasler, 1989) where the interest is not necessarily reciprocated by the mentor.

The mentor should not be confused with a coach, who usually has the success of the team in mind (Showers, 1985). However, Burack (1988:

314), speaking of supervising managers, stated, "The coach may also be a mentor, who can offer the appropriate types of guidance needed by the individual in moving into the organisation's 'inner circle' of key people. Over time, the manager/coach can help the individual start to transform further experience gains into useful insights related to the organisation's culture and the types of insights (wisdom) needed in senior decision making. The difference between experience and knowledge is considerable". Caldwell and Spinks (1992) thought that a coach provides collegial support, but suggested that a mentor fulfills broader functions.

The functions of a 'mentor', as described by Anderson and Shannon, are not the same as those of a nursing 'preceptor' who helps a student "experience day to day practice with a role model and resource person immediately available within the clinical setting" (Lutes and Chickaree in Burnard, 1990: 353). Donovan (1990: 1) argued that the classic idea of 'mentor' created the archetypal dyad of a younger male protégé to an older male mentor which he felt continues in academic and professional circles today. Telemachus' mentor was imposed, as may be the case in formalised business and nursing programs (Carothers, 1993). However, for Telemachus, Mentor proved to be a guide throughout life providing him access to a role model and individual coaching when needed and ultimately shaping his philosophy and sense of wisdom through a personal relationship.

Plucker (1993: 14) noted that in the literature there has been no theoretical explanation for the identification of mentors. Looking at matching gifted children with potential mentors, he suggested that one level of identification is a physical manifestation which includes race, ethnicity, gender and age. This interaction may only lead to a superficial relationship. If the potential provider of guidance and information shares another internal level of congruence which is less conspicuous and deals with emotions, interests, compassion and the hidden facets of personality and cognition, then a potentially long-lasting and effective relationship may ensue. Torrance (1984: 6) also found this to be the case through his longitudinal study of gifted children when he wrote, "it has been demonstrated empirically that mentors can make a difference in the creative achievement and educational attainments of mentees".

Mentors for adults have been described as being older, superior performers with a developed reputation who know a lot about an organisational structure, its politics and networking (Beeler, 1988; Segerman-Peck, 1991; Levinson in Limerick, 1992). In his study of business executives, Roche (1987) showed that after age 55, those approaching retirement may have a greater desire to pass along what they have learned and thereby increase their willingness to become a mentor.

There is a need not only in business, but also in teaching, for mentors to have knowledge and skills directly needed by the mentoree. In schools, Cook and Smith (1993) pointed out that 'master teachers' can be professionally intimidated by the idea of becoming a mentor when they are simply appointed to such roles unless they truly understand what is meant by being a mentor. In looking at science teachers, they found that if the mentor is a colleague in the new teacher's area of expertise, they are not only sensitive to his/her needs, but also aware of the special responsibilities for the science subject. This becomes a more effective mentoring situation than induction by a general administrator. McCann and Radford (1993: 25) also found that being a mentor, which they refer to as 'teacher collaboration', was one way to overcome teacher isolation and provided for reciprocal learning about teaching.

This acknowledgment of the mentoring process is important in universities as well as in schools. Jeppeson, Laursen and O'Neil (1994) reported that senior staff from the Institute in the Faculty of Science were assigned to act as mentors for junior university members stressing lecturing, learning and assessment. The mentors focused on Schon's (1983) model of the 'reflective practitioner' by firstly, gathering evidence of one's actions and interactions; secondly, reflecting upon the evidence and its personal meanings; and thirdly, discussing evidence and personal reflection with 'critical friends'.

Kram (1983: 614) categorised functions carried out by mentors to include sponsorship, exposure and visibility, coaching, protection and giving challenging assignments. Additionally, psychosocial functions improve self-identity and self-confidence through role modelling, acceptance and confirmation, counselling and friendship. Jeppesen, Laursen and O'Neil (1994: 4) concluded that a mentor may function as an educator, supervisor, guide, critical friend (after Schon 1983), consultant, trainer, idea generator and ally. Although some of these roles require the mentor to be in a position of power, roles such as teacher and developer of talent require a position of influence (Schein in Batayola, 1987: 4).

2.3.2.2 Characteristics of mentors

Using the definition of a mentor as a guide for life who can provide information, support, and feedback on personal and professional levels, Segerman-Peck (1991) surveyed women in management positions. Characteristics of their mentors, both male and female, were listed in rank order as shown in *Table 2.1*.

Table 2.1 Ranked characteristics of mentors from the research of Segerman-Peck (1991)

1. Ability to teach or facilitate learning
2. Wide network of contacts
3. Willingness to share experiences
4. Professional/academic qualifications
5. Sharpness of intellect
6. Ability to think on their feet
7. Ability to give advice and then withdraw
8. Organisational skills
9. Wisdom
10. Success
11. Influence
12. Discretion
13. Perception
14. Commitment to the development of young people

Burack (1988: 314) questioned the qualifications of a potential mentor. "Does he/she know the appropriate 'whys' and 'whats' to ask to be effective in building insightful experiences for the subordinates? Does the manager recognise the requirements for being a good teacher of mature people?" Levinson (1978), Roche (1979), Beeler (1988), Limerick (1992), and Carruthers (1993) have suggested other characteristics for an effective mentor such as: being a good listener, showing a willingness to spend time, giving a sense of confidence, building enthusiasm, having patience, demonstrating very high standards, gaining respect from peers, knowing the politics of an organisation's paths to advancement and sharing acceptable methods for attaining visibility.

Torrance (1984:2) argued that the mentor can support mentorees in expressing and testing their ideas, can guard them against reactions from peers and superiors long enough for them to test and modify their ideas, and can keeps situations open so that originality may occur and persist.

In summary, mentors are people who choose to form an association with mentorees to whom they offer encouragement, support and guidance and in return may develop a mutually beneficial relationship. It is of interest to this study to discover if mentors chosen by leaders in environmental education shared these same characteristics and functions of a mentor so that they could provide a positive experience for the mentoree.

2.3.3 Mentoree

2.3.3.1 Definitions of mentorees

The person who has experienced a mentoring relationship has been described as student (Schon, 1983; Heywood, 1988), novice (Howey and Zimpher, 1986), beginner (Cochran-Smith & Paris, 1992), neophyte, (Shulman & Colbert, 1987), inductee, (Goodman, 1988), and novitiate, (Zimpher & Reiger, 1988). The most popular term, however, is protégé (Phillips-Jones, 1982; Merriam, 1983; Bravmann, 1986; Winstone, 1986; Beeler, 1988; Anderson & Shannon, 1988; Gehrke,1988; Hardcastle, 1988).

The term 'protégé', as used by these authors, seems to imply more than its dictionary meaning: "One who is under the protection or friendly patronage of another" (Macquarie Dictionary, 1987: 320). These various terms may imply that the starting professional does not have the necessary qualities to become proficient without guidance. Gehrke (1988) postulated that the 'protégé' is in a pragmatic and "primarily utilitarian relationship", the *'I-It'* relationship described by Martin Buber (1970). Baird (1993) felt that the term connotes paternalism. Referring to nursing, Bidwell and Brasler (1989: 24) pointed out that some

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beginning students "are not likely to be ready for a mentoring relationship since they are involved in learning the basic skills of the profession", but that "graduate students who are developing as scholars and researchers are in a transitional period in their career and are likely to require and appreciate advice and counsel from an interested faculty-mentor".

2.3.3.2 Characteristics of mentorees

One major characteristic of the mentoree is his/her potential which is recognised and nurtured by the mentor. Historically, this has been documented by Plato who was the student of Socrates, Aristotle and his student, Alexander the Great, and Democritus and his teacher, Leucippus. In more modern times there have been the mentoring relationships between Darwin and Professor Hudson (Head and Gray, 1988); Jung and his mentor, Freud, (Shea, 1992); Leibig and Kekulé (Campaigne, 1993); Rouelle and Lavoisier (Mainz and Girolami, 1992); Margaret Mead and Gregory Bateson, and the contemporary example of Gail Sheehy and Margaret Mead (Carruthers, 1993).

Beeler (1989: 42) described mentorees as "young professionals in their career who are considered by mentors as the leaders of tomorrow. They are college educated, achievement-oriented, have a high energy level and a positive attitude, they have the basic skills and abilities that when fully developed, will lead to success".

Byrne (1989: 13) stated, "It is perfectly normal and legitimate for senior professional, academic or managerial staff to make judgements on which students, young staff, trainees etc. deserve special encouragement, extra training or special experiences because they are unusually gifted, committed, hardworking, showing flair, and will be a good return-for-investment". Roche (1979: 28) found in his survey that better educated young executives more frequently "attracted the attention of a superior, or being more appreciative of the value of a sponsor, initiate a relationship". Shea (1992: 5) balanced these views saying, "the mentee can only *experience* the beneficial gifts of mentoring by assuming ownership of what the mentor has offered".

In summary, regardless of the mentoree's age, experience or status and the interest exhibited by the mentor to help, there must be a willingness to enter into a mutual relationship.

2.3.4 Mentoring Relationships

2.3.4.1 Initiation of mentoring relationships

Darling's (1984: 42) analysis of the mentoring relationship listed three basic requirements between the mentor and the mentoree: attraction, action and affect. The 'attraction' can happen because the mentor is a model the mentoree looks up to, an envisioner who communicates a goal or vision that is personally meaningful to the mentoree, or an energiser who stimulates the mentoree by his/her personal enthusiasm. The 'action' component requires a time and energy commitment on the part of the mentor in order to engender respect and give encouragement and support. Caldwell and Spinks (1992: 2) cited Healy and Welchert's meaning for the 'effect' of this kind of relationship:

> We consider mentoring to be a dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (protégé) aimed at promoting the career development of both. For the protégé, the object of mentoring is the achievement of an identity transformation, a movement from the status of an understudy to that of a self-directing colleague. For the mentor, the relationship is a vehicle for achieving mid-life 'generativity' ... meaning a transcendence of stagnating preoccupation.

The relationship may begin informally through the initiation of either the mentor or the mentoree and sometimes without acknowledgment by either party. "Sometimes a person will have no idea that he or she is considered a mentor" (Beeler, 1988: 42). This sort of mentor can be a university faculty member, former boss, or someone outside the organisational setting. Since the mentor can provide counsel, advice and access to other role models, protégés should seek out possible mentors whose work they admire and offer them their services as well. Hennig and Jardim (in Segerman-Peck, 1992: 62) suggested a list of questions to guide those seeking a mentor for a mutually satisfactory relationship.

- Where am I now?
- What is my present level of knowledge, skill and competence?
- Who are the people I know?
- What positions do they hold?
- What can they help me with?
- What can they teach me?
- What information did they have that I need?
- Whom do they know who can help me?

Levinson *et al.* (1978) observed that after about age forty, men have outgrown the readiness to be the protégé of an older person and rarely have mentors themselves. However, Roche (1979) countered this. He found that while most of the top executives that he surveyed saw the first fifteen years of their career as a period for learning and growing, more than a quarter of the top executives that he surveyed became protégés during the second decade of their careers. No matter when one becomes a protégé, "mentoring is a powerful system for making progress" (Segerman-Peck 1991: 13).

2.3.4.2 Development of mentoring relationships

Levinson *et al.* (1978) described a 'level of intensity' near to a love relationship that may develop with mentoring. Biel (1988) suggested one way to engender those feelings is to share the mentors' contacts and associates, understanding that your progress is a reflection of the mentor. Kram (1983) advised that to understand fully the nature and impact of a mentoring relationship, it is necessary to examine how the relationship changes over time. She developed a chart to show the most frequently observed psychological and organisational factors that cause movement during a mentoring relationship *(Table 2.2)*.

Table 2.2 Kram's phases of the mentoring relationship.

Phase	*Definition*	*Turning Points*
Initiation	A period of six months to a year during which time the relationship gets started and begins to have importance for both managers	Fantasies become concrete expectations Expectations are met; senior manager provided coaching, challenging work, visibility; junior manager provides technical assistance, respect and desire to be coached There are opportunities for interaction around work tasks
Cultivation	A period of two to five years during which time the range of career and psychological functions provided expand to a maximum	Both individuals continue to benefit from the relationship. Opportunities for meaningful and more frequent interaction increase. Emotional bond deepens and intimacy increases
Separation	A period of six months to two years after a significant change in the structural role relationship and/or in the emotional experience of the relationship	Junior manager no longer wants guidance but rather the opportunity to work more autonomously. Senior manager faces midlife crisis and is less available to provide mentoring functions. Job rotation or promotion limits opportunities for continued interaction; career and psychological functions can no longer be provided Blocked opportunity creates resentment and hostility that disrupts positive interaction.
Redefinition	An indefinite period after the separation phase, during which time the relationship is ended or takes on significantly different characteristics, making it more peerlike friendship.	Stresses of separation diminish, and new relationships are formed. The mentor relationship is no longer needed in its previous form. Resentment and anger diminish; gratitude and appreciation increase. Peer status is achieved.

Kram's phases of the relationship - initiation, cultivation, separation and redefinition - will be referred to in Chapter Six under this researcher's titles of initiation, development, dormancy, reactivation and sustainment. 'Development' was chosen because it encompasses the idea that the relationship can grow in two dimensions - for both the mentor and the mentoree. 'Dormancy' more fully describes what happens when a mentor and mentoree do not have frequent contact, but the relationship can be easily re-established. "Reactivation' expresses the idea that the relationship never lost its importance despite periods of dormancy and therefore does not need to be redefined. An additional stage called 'sustainment' is included in the results of this study. In describing the phases it will be of interest to compare the similarities and differences from a business setting to an environmental education setting. Will the turning points, such as opportunities for interaction, be similar; will the emotional bonds deepen and intimacy increase as a psychological function of time; will blocked opportunity create resentment and possibly lead to a hostile ending; will peer status and friendship be achieved; or, will the relationship no longer be needed?

Shapiro, Haseltine and Rowe (1978: 55) also postulated a continuum for developing of mentoring relationships. They placed 'mentor' and 'peer pal' as endpoints with 'sponsors' and 'guides' as internal points along the way. Campbell-Heider (1980) spoke of a 'patron system' as the most intense form of sponsorship. Puetz (1987) added the notion of 'preceptor relationships' to her continuum, describing it as one in which an individual teaches, supervises or coaches. Byrne (1989: 19) defined mentorship as an individual act which springs from attitudes and style in personal relationships. She described a continuum from passive role modelling to active mentorship as seen in *Table 2.3.*

Table 2.3 Byrne's continuum of mentorship (1989: 19).

Passive role model	Active role model	Implicit mentorship	Explicit mentorship
the mere visibility level	working to encourage students by role modelling processes	empathy & identification	conscious criteria between mentor and protége´

If mentoring becomes explicit it can help one's career pathway beginning in the school years with teachers. Segerman-Peck (1991) writes, "If they (teachers) are genuinely interested in you as a person, they can help you see yourself in context of the rest of your life and help you map out a future". Byrne (1989: 11), speaking only of women, says that mentoring can work at pre-university stage, where female and male science teachers in school may take particular trouble to seek out scholarships for their gifted girls. Some functions which mentors carry out may advance careers of beginning teachers (Ballantyne, Hansford and Packer, 1992). In higher education, mentors may alert protégés to postgraduate grants, part-time tutorships, enhance their 'visibility' in seminars and through joint papers. In these instances, the protégé is seen as a young professional.

Bahniuk, Dobos and Kogler Hill (1990) reported on the impact of mentoring on career success and found that males and females who have mentors have richer communication environments than those without mentors and this informal learning impacts on their career success. In their replication research they also cite Hill *et al*. (1989) who developed an instrument to measure mentoring among a college faculty. Three major dimensions emerged: 1) mentor/protégé - reflecting one-way communication, 2) collegial/task support - showing a reciprocal exchange of ideas and constructive criticism, and 3) collegial/social support - portraying communication as friends, listening to personal problems and sharing confidences.

Mentoring may also take place at various stages of a career. Segerman-Peck (1991: 12-13) said she did not have a mentor, but maintained that, had she been helped by a senior colleague, she may have risen further and faster. But most importantly, she stated, "I would have changed certain aspects of my career much earlier than I did ... I thus learned early in my professional life that people are very important in the development of other people: the different perspectives of their various backgrounds contribute to the information on which an individual makes a decision or takes an action". This echoes advice given by Hennig and Jardim (1977) who studied twenty-five top level women executives. They recommended that women "look for a coach, a godfather or godmother, a mentor, an advocate, someone in a more senior position who can teach ... support ... advise ... critique" (in Merriman 1983: 167).

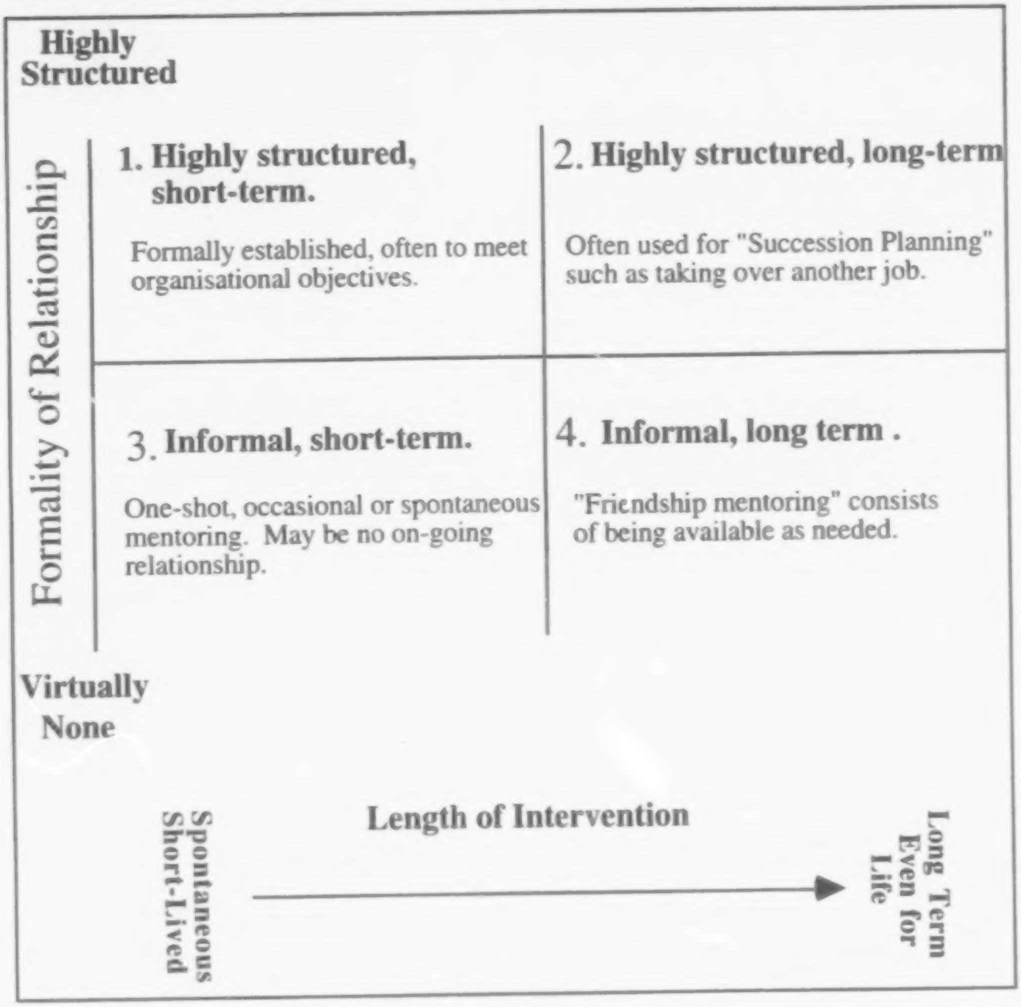
Highly Structured
Formality of Relationship
1. Highly structured, short-term.
Formally established, often to meet organisational objectives.
2. Highly structured, long-term
Often used for "Succession Planning" such as taking over another job.
3. Informal, short-term.
One-shot, occasional or spontaneous mentoring. May be no on-going relationship.
4. Informal, long term .
"Friendship mentoring" consists of being available as needed.
Virtually None
Spontaneous Short-Lived
Length of Intervention
Long Term Even for Life

Figure 2.3 A modified chart to show Shea's (1992: 8) four categories of mentoring relationships.

Shea (1992) has developed a schema to show the structures of such possible mentoring relationships . This is presented in *Figure 2.3.* The majority of the mentoring relationships which will be reported in this study were founded on an informal basis. The recommendations for future mentoring by these environmental education leaders will be considered in Chapter Six with consideration of the literature findings regarding both informal and formal mentoring relationships.

2.3.4.3 Problematic areas

The literature differs on the ending of mentoring relationships. Mentoring may become problematic when the protégé begins to outstrip the mentor. Gray's model (Carruthers, 1993: 21) postulated five levels of protégé growth and change (*Figure 2.4).* It attempted to explain how a mentor's support is very important at the beginning of a relationship (M), but as the protégé grows in competence (mP), the mentor's influence is reduced and finally withdrawn leaving a self-reliant protégé (P).

Gray's Model of Protégé/Mentor Change

	M	Mp	MP	mP	P
Level	1	2	3	4	5

Figure 2.4 Gray's (1989) model of growth of the protégé (p, P) and withdrawal of the mentor (M, m).

Levinson *et al.* (1978) found that a true mentoring relationship must last at least two to three years, but after ten years an intense relationship might end with conflict, bitterness and anger on both sides. However, Roche (1979: 24) showed that mentoring relationships, in business can develop into lengthy and close friendships. He queried Levinson's findings saying that "the study did not attempt to measure the intensity of the initial relationship, past feelings (which may well have been tempered by time), or current feelings about mentors with whom respondents have no current relationships".

Torrance (1984:55) reported on several obstacles to enduring mentoring relationships:

> These include the frequently intimidating nature of some mentor relationships, setting too fast a pace and not respecting the natural pace of the mentoree, making sacrifices to personal integrity, sex role barriers, racial barriers, behaviour disapproved by the mentor, a

> philosophy of life incompatible with the acceptance of a mentor relationship, aversion to the institution or social system to which the mentor belongs, feeling of threat to the status quo ignited by the mentee and feeling of hurt, mistreatment or rejection.

Through Kram's (1983: 608) intensive biographical interview study of eighteen mentoring relationships in one corporate setting, she found that relationships can be limited and "that , indeed, a relationship of this kind can become destructive". Carruthers (1993: 18-19) listed several reasons for the possible break-up of a mentoring relationships: intimacy leading to acrimony, jealousy of the mentoree's peers, blocking the advances of the protégé, perceived professional intimidation, spouse jealousy and threats from cross-gender mentoring.

Cross-gender mentoring is a potential problem area due to the issues of gossip, envy, suspicion, speculation, false assumptions, sexual stereotypes and charges of sexual harassment (Shea, 1992). Clawson and Kram (1984: 25) summarised it thus, "Taking an active part in the growth and development of a subordinate can result in growing concern, liking, and admiration. Channelling these feelings into a productive professional relationship without falling into the pitfalls caused by excessive intimacy requires thoughtful management".

This issue has continued to be explored over many years (Phillip-Jones; 1982; Bowen, 1985; Arnold and Davidson, 1990; Burke and McKeen, 1990). Acknowledging the difficulties, researchers do not generally see reasons to avoid cross-sex mentoring while the number of female mentors is still scarce (Vance, 1982; Limerick, Heywood & Daws, 1994). In fact, it can be a tool for effecting gender balance and fairness in the workplace. It is an interesting point that some researchers felt that mentorship is "a product of the feminist movement, the development of the new entrepreneurial spirit in the seventies and of the business schools of American universities" (Burnard, 1990).

Another problematic area is the length of the relationship. Donovan (1990) concluded that, for nurses, mentoring schemes need not be long-term and, in fact, they may prefer a short term mentoring relationship due to their rotating schedules. Instead, he suggested a short-term interaction concentrating on the educational needs of the student -

tuition, assessment, and monitoring. On the other hand, in a program which applied mentorship to leadership development, Shandley (1989) found that even though it began with the expectation of a short, defined period of time, a longitudinal study showed that most participants stayed in contact with their mentors for up to a year or longer.

Cross-cultural mentoring has received little attention, but Shea (1992: 85) pointed out that "as we move from a society focused on things to one focused on human values, mentoring offers a powerful tool for benefiting from cultural diversity. By careful listening, by respecting our difference and by practicing the art of inclusion, we can build a stronger, more rewarding organisation and society".

2.3.4.4 Mutual Benefits

Gehrke (1988: 44) described the mutual benefits of mentoring in terms of Buber's (1970) *I-Thou* relationship which authenticates the relationship existing between the protégé and mentor. "When this happens, what goes on between us confirms each of our existences, our worth, and most importantly, our potential". Depending on where people are in their careers, the trust and duration of the relationship, the personal value systems and personalities, protégés list the benefits of being mentored as improved performance, technical skills, and ability to handle people, career development, personal growth, protection, learning opportunities, compassionate feedback, and receiving recommendations. Gehrke's ideas are reiterated by Carruthers (1993: 21) seven key aspects of mentoring.

1. Mutual choice is advocated.
2. The relationship extends beyond professional interest.
3. There is no evidence of threat.
4. There is mutual need.
5. There is little evidence in the literature that mentoring has disadvantages for the protégé.
6. There is evidence of affection.
7. There is evidence of trust.

Baird (1993: 55) conceptualised effective mentoring as an amalgam of Helper + Sharer + Carer and commented that "this triplet of pro-social attributes blends cognitive responsibilities (adviser, guide) with affective caring and sharing that enrich the relationship for both parties". *Figure 2.5* illustrates this concept.

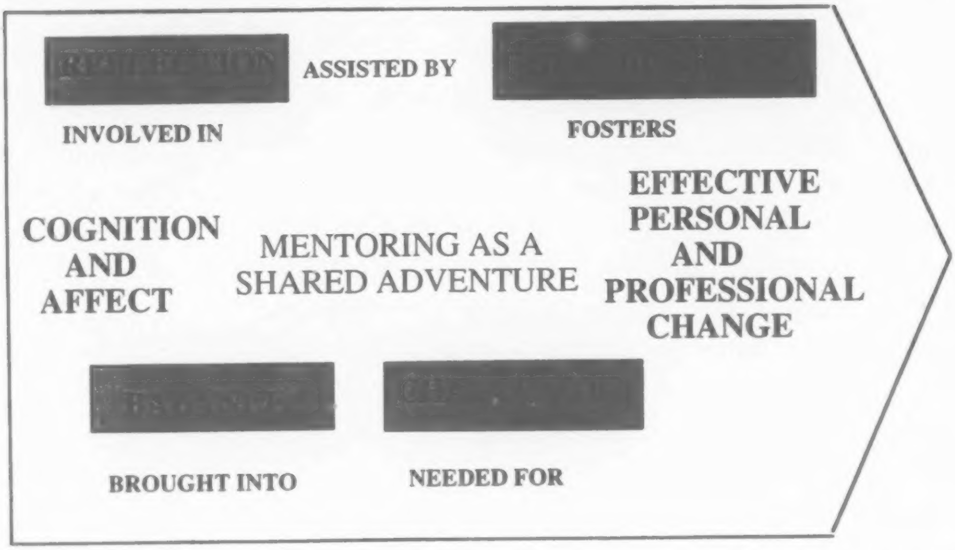
ASSISTED BY
INVOLVED IN
FOSTERS
COGNITION AND AFFECT
MENTORING AS A SHARED ADVENTURE
EFFECTIVE PERSONAL AND PROFESSIONAL CHANGE
BROUGHT INTO
NEEDED FOR

Figure 2.5 Baird's adaptation of the Teaching and Learning Science in Schools (TLSS) program to the conceptualisation of mentoring.

This shared adventure of mentoring is seen at the Queensland University of Technology which instituted a Convocation Mentor Scheme placing final year students with a professional in the workplace. The report for the pilot project was summarised by Taylor (1993: 1):

> Benefits to the students were described in three broad categories - gaining practical skills and confidence in their professional competency; gaining insight into the 'culture' of the profession and the breadth of opportunities; and receiving assistance relevant to seeking employment in the profession.
>
> Benefits for mentors included keeping in touch with the university, being stimulated by the student's educational experiences, and having some useful workplace tasks performed.

Other mentors have cited benefits such as increased understanding of their own behaviour, modifying the time commitment, understanding learning needs, helping protégés avoid mistakes, increasing their own self-worth, passing on valuable ideas and personal values systems, pride in their success, testing of ideas, liberation through delegation, increased powerbase with new networks from the protégés and access to more modern technological resources (Segerman-Peck, 1991). Limerick (1992) cited Arnold and Davidson (1992) saying, "mentors also experience benefits including increased job satisfaction, increased peer recognition and potential career advancement". Kram (1983: 609) found that, for a mentor, "entering a developmental relationship with a young adult provides an opportunity at midlife to redirect one's energies into creative and productive action that can be responsive to these salient concerns".

Shea (1992: v) challenged researchers of mentoring by asserting that "the goal is no longer career climbing in the company, rather it is the empowerment of the mentee by developing his or her abilities. Mentoring is now seen as a process whereby mentor and mentee work together to discover and develop the mentee's latent abilities". Caldwell and Carter (1993: 218-219) acknowledged the diversity of this topic stating that:

> The terminology which pervades the discourse on mentoring differs - mentor for educational and legal settings, coach for industrial setting, preceptor for nursing. Many models for mentoring are available which differ in approach and formality, yet the broad strategies are similar. Mentoring is appropriate for any group which seeks to become a 'learning organisation', open to change, participatory, committed to personnel development, aware of international competitiveness in a global economy, and involved in the culture of service. Most importantly, mentoring is appropriate for individuals who seek to give or receive the benefits of a personal and professional relationship through an interchange of skills, knowledge and attitudes.

This review of the literature of mentoring both in the context of environmental education and in the wider context of professional relationships has advised the present study in two specific ways. Firstly, it has provided some *a priori* concepts with which to begin the collection of mentoring data such as understanding the general process of a mentoring relationship and the benefits for both the mentoree and the mentor. Secondly, it was revisited as a base for comparison with the study when ideas emerged and were conceptualised during the analysis, particularly for gender patterns and the ending of the relationships. This simultaneous consideration of the literature is important to the grounded theory methodology used in this study. The next sections will tie the concept of mentoring more closely to leadership and show its applications to environmental education.

2.3.5 Mentoring and Leadership

Positive connections between mentoring and leadership have been made in the fields of nursing, business and education which show that it is more than a management tool. Over twenty years ago, Cogan (1973) speaking of clinical nursing supervision showed the progression toward leadership from formal supervision to collegial mentorships. He ascribed to Mattaliano's (1973: 41) definition of 'collegial supervision' as having "mutually supportive, dialogical relationships" necessitating "a climate of trust, being open and flexible with examined judgement". Cogan (p146) defined a 'leader' as one who "catalyses the internal reflection process with disciplined intuition" and distinguished a 'mentor' as someone who "recognises the springs of his own behaviour".

In the field of business, Zaleznik (1977) stressed the necessity of a one-on-one mentor relationship in the development of leaders versus managers. He believed that mentors risk intense emotional involvement when they choose to work closely with their juniors. Despite this mental gamble, Lunding, Clements, and Perkins (1978) supported the view of needing a mentor and said that "everyone who makes it has a mentor". However, in a survey of business leaders, Roche (1979) showed that although not *every* top executive had a mentor, those who did enjoy such a relationship derived greater satisfaction from their career and work. Interestingly, Roche (1979: 20) found that despite high levels of influence which executives report about their mentors, their own 'success' came from personal characteristics including motivation, willingness to work and the ability to lead.

Vance (1982: 10-11) explored the idea that as nursing leaders become more powerful in their personal and work lives, they understand the value of a mentoring relationship. She found that eighty-three percent of her sample of influential nurses reported having one or more mentors and that ninety-three percent reported that they were mentors to other developing nurses. She stated, "These nursing leaders see their role as an important part of their leadership responsibilities. One leader commented, "My professional life has been influenced by significant leaders at every strategic period". Vance concluded that "leaders breed other leaders and they accept this as an inherent responsibility". Although the mentor relationship was far less common among women professionals than among men, it could flourish among women, especially at leadership levels. She characterises these women as:

> an élite group in every sense of the word. They are the persons who 'made it' in nursing, who became a group of prominent, influential leaders and who took extraordinary risks with people and ideas and made an impact on their profession. They were fortunate to have found help in advancing and succeeding in their field and they count mentor connections as one of their many resources. For this group of leaders, the mentor relationship has played a significant role in achieving their goals, being committed to their profession, and finding satisfaction with their career.

Goldstine (1985) studied the role of the mentor in facilitating the entrance to and success of women in leadership positions by using Levinson's 'life stages model' (1978). She found that the definition of mentor was more generalised for women in that they benefited as much from mentoring from their friends, colleagues, and significant male partner as they did from the traditional workplace hierarchical model. An important finding is that it may be necessary for potential protégés to initiate mentoring relationships with women mentors.

Bennis and Nanus (1985: 188) found that their group of business leaders were all highly proficient in learning from the experience of mentoring.

> Most were able to identify a small number of mentors and key experiences that powerfully shaped their

> philosophies, personalities, aspirations, and operating styles. And all of them regard themselves as 'stretching,' 'growing' and 'breaking new ground'.

Although these researchers have made links between leadership and mentoring, Shandley (1989: 61) thought that mentoring had not specifically been applied to leadership development. He examined a program called 'Excel" which began as a community-based leadership development program for students at the University of Minnesota. An important aspect of these short-term mentoring relationships was that using them purely for career development purposes was discouraged. Instead it focused on the following:

> The aspiring leader needs a guide - a concerned, supportive friend who can prepare them for the trials and tribulations of leadership. ... If the future of our organisations, communities, states and nation is dependent on the quality of our future leaders, then successful mentoring may be crucial.

Gehrke (1988: 44) also warned about self-serving mentoring relationships when she disagreed with management consultants (McPartland, 1985) who had "advised that one should seek out mentors for their expertise and not get too close to them, remain in control of the relationship and get out of it when it is no longer useful".

Alternatively, Gehrke suggested that we pursue a mentoring relationship as one form of teacher leadership. She cited eight ways to enhance the possibilities: choice, time, negotiation, growing independence, acknowledging uniqueness, reciprocity, whole life vision and dialogue. This would enable two people to find each other, have time to become 'present to each other' and to experience the personal development that results. This type of mentoring would fulfil Buber's (1970) *'I-Thou'* relationship, that is, we offer ourselves as we really are, and seek and accept the other person as he or she is".

Moore (1982: 23) wrote about the role of mentors in developing administrative leaders for academia. She stated that deans, vice-presidents and presidents "have achieved those positions largely because someone older, wiser and more powerful saw in them a spark of leadership ability and encouraged them to develop it". Most of these mentors were usually training the protégé with the intention of helping him or her secure a higher position. Rather than having the protégé supersede the mentor, they developed a collegial system of contacts making them useful to the broader organisation. The mentor operated, not to teach directly, but to awaken, test or exercise the protégé's talents. The placement of the protégé in a wider leadership network increased the mentor's sphere of influence, but not without potential risk to their reputation since academia is a competitive and politically sensitive arena. Therefore, trust and respect are important aspects of a corporate mentoring relationship.

Deas (1984) looked at women in community colleges who completed a leadership program which included a mentoring component. Leaders indicated that among their most beneficial aspects were increased self-confidence and networking, while mentors perceived that the program contributed to the leaders becoming more 'empowered' and they had provided career-enhancing assistance.

Carroway (1990) reported on four mentoring programs designed to foster leadership development: The Association of California Community College Administrators Management Development Commission (1988) who used experienced administrators as mentors; the American Council on Education (1965) whose goal was to identify future leaders in higher education and prepare them for positions in college and university administration; the Ford Foundation/ACE program (1990) who looked at community college faculty; and the Mentoring Institute (1978) who investigated mentoring attributes such as such as commitment, quality, integrity, trust and respect. Carroway concluded that the mentorship process may be just the experience to develop full leadership potential which could then be measured against her leadership competency checklist.

Walker and Stott (1993) discussed the mentoring of potential principals in a structured program in Singapore which emphasised guidance and using the individual's abilities. The researchers cautioned that one must take care when transposing the finding about mentoring programs from one setting to another due to variation in structures and rationale, resource support, and controls such as cultural and political agendas.

Recalling that Levinson said periods of transition are times to break up old structures, Daloz (1986: 85, 96-97) described the mentoring of an adult student in his early thirties who was returning to school for a further degree.

> He would need to make some qualitative changes, letting go of some of the assumptions that got him through the earlier decade. *More* education wouldn't do. He needed a *richer* education, one that would provide the breadth and understanding necessary for leadership ... mentors may be seen as gatekeeper as well as guides. They stand at the boundary of the old and the new worlds and, as such, hold the keys for successful passage. ... Yet to accept it too easily or hold it too long denies the student his or her own power.

If mentoring can provide a passageway for enriching the skills, attitudes and values of leadership, then it is appropriate to apply it to the field of environmental education.

2.3.6 Mentoring, leadership and environmental education

There have been discussions about mentoring and protégés in the fields of philosophy, art, literature, the military, business, sports, nursing, and education. In the world of environmental education, however, the existence and importance of mentors have been largely uncelebrated.

Translating the concept of mentoring to environmental education needs some adjustment (Walker and Stott, 1993). It differs from higher academia in that leading academics have the ability to influence students' aspirations, acquisition of skills, and progress on career paths, but they do not see themselves with a management responsibility except in their discrete disciplines (Bryne, 1989). Business management has previously seen mentoring as a way to ensure a protégés career prospects, but not necessarily his/her personal growth (Caldwell and Carter, 1993).

If mentoring is integral to personal development, then Beeler (1988) thought of it as a tool for young ambitious professionals who might become administrative leaders in the parks and recreation field. She reported that mentors often see leadership qualities to be nurtured in the protégé as a 'leader of tomorrow'. The protégés are usually well-educated, have a high energy level, possess skills and abilities along with a positive attitude that may lead to success in a leadership position. They consider the mentor to be a trusted friend and counsellor, receiving guidance and direction from the mentor. However, she advocated that prospective mentors take responsibility to learn as much as possible about the mentoring process and then take proactive steps in contributing to the growth and development of young, achievement-oriented individuals.

The importance of mentoring for a leader in environmental education is emphasised in "Climbing the Ladder", an interview with Mark Udall (1986: 19) about his career with Outward Bound.

> *Did you have any mentors who were important to you?*
>
> One is John Evans who worked for Outward Bound for about 15 years. He gave me good advice and was also willing to be critical of me in a couple of situations where I'd made some mistakes. Yet overall he was very supportive of me when I was course director.
>
> Leslie Emerson was senior program director - gave me advice, trained me, taught me to say no, was a firm believer in taking care of yourself ... take the time to nurture yourself.
>
> Jerry Golins, previous executive director, and I certainly bumped heads at times and yet nearly every one of those situations were ones in which Jerry was really pushing me to grow, was giving me some hard feedback, and wasn't going to let me off easily. I think that is because he felt he saw some potential in me that needed to be developed. He took some risks. His style and approach is very different from mine, but I have a lot of respect and appreciation for the direction he provided for me.

This excerpt highlights mentoring themes such as: being a critical friend, giving support, nurturing, opening opportunities, giving feedback, risk-taking by the mentor, seeing potential and having mutual respect.

Leaders in the field, because they must deal with issues relating to people, be it in schools, natural resources areas or museums must be personally and professionally developed. Lorenz (1992: 214-5) queried if the environmental education field was making full use of the incredible power of the thousands of volunteers in the grass-roots organisations such as Volunteers in the Parks, Student Conservation Association, the National Audubon Society, and the Izaak Walton League of America. He felt that motivating volunteers meant not only educating, but training them. Mentoring was one of the suggestions culled from interviews with these volunteers:

> *Train new conservation leaders* ... Look for those individuals with leadership potential and the skills you need, and train them to be good leaders. Assign them to work with more experienced people who could serve as friends, supervisors, and *mentors* ... Boost self-confidence by providing them with opportunities to solve problems on their own.

Foster (1993) described the typical leader from a non-governmental organisation as often poorly prepared and trained, isolated from his/her peers, and practicing a trial-by-error style of management. Among his five leadership strategies, he advocated that mentorships could help to enlarge the pool of leaders. One example of this positive outcome is offered by Olson (1993: 130) who attributed his success as a fundraiser for American Rivers to "some superior mentors and excellent volunteer leaders ... with advice from inspiring leaders of similar organisations".

Lyons (1993: 92, 94) described getting into the field of environmental and natural resources accidentally, but attributes his transition to leadership in policy and legislation as being motivated by some people he considered mentors.

> 'Doc' is one of those unique figures who has a passion for life and for learning and the ability to instil that passion in his students. There have been numerous times during my career where Doc's wise counsel has been invaluable. ... The people I met in this position have become close friends, colleagues, mentors, and even adversaries to this day. ... People are faced with the

> dilemma of whether they should lead or follow every time a new opportunity presents itself. A leader is the one who seizes it.

Environmental mentors should be those who "move beyond the vision" (Atkin, 1989), dispense "dangerous knowledge" (Maher, 1985), and are capable of inspiring others to undertake "gradual personal transformation" (Capra, 1983).

2.3.7 Synopsis of the sphere of mentoring

There has been extensive research about the sphere of mentoring in the fields of business, nursing, and education. It has discussed various opinions on mentoring, mentors and mentorees, their roles and functions and the phases of mentoring relationships, including problematic areas. The mentor is seen as one who is a guide in life on both a personal and professional level, but who also accrues some positive benefits for themselves. The mentoree is a person of either gender, older or younger, proficient or still learning who has experienced a mutually satisfying relationship with a mentor.

Mentoring has been seen as an important adjunct to transformational leadership development where important attributes include: articulating a vision, shared attention to problems, interaction of leaders and followers, motivation, and values orientation such as commitment, quality, integrity, trust and respect (Roueche, Baker and Rose, 1989).

Literature references which link mentoring and environmental education leadership are few, but their message echoes that heard in other fields. Environmental education leaders who have had the benefits of mentoring need to be proactive in training new leaders. Leadership can be nurtured through professional organisations or volunteer groups and the seeking of such relationships can originate from mentorees as well as mentors.

The next section will review how professional development intersects with mentoring to enhance leadership.

2.4 The Sector of Professional Development

What you are speaks so loudly people cannot hear what you say.
Bob Samples, Essence (1971: 6)

2.4.1 Definitions of professional development

There is a growing body of literature about the professional development of leaders who make reflective choices (Butler, 1992b) and move to action learning (Revans, 1982) as they make changes throughout their careers. This investigation into the literature will help characterise professional development in general and how it applies in particular to careers in environmental education.

The Macquarie dictionary (1987: 68) defines 'career' as "1) a general course of action or progress of a person through life, 2) an occupation, profession followed in one's lifetime". In order to understand 'life progress', Daloz (1986: 47-8) gave a brief history of developmental theory starting with Piaget's qualitatively different stages constructed from childhood experience. He emphasised that these stages of personal growth are less concerned with ageing than with growing wiser.

> Rather than see intelligence as a fixed condition, developmentalists suggest that we all have the potential to evolve toward increasingly integrated and differentiated ways of making sense of the world. Loevinger (1980), Kohlberg (1981) and Gilligan (1982) went on to suggest that we develop from a 'preconventional' stance in which a person's survival is paramount, move to a 'conventional' orientation whereby we are accepted by society, and possibly continue into a 'postconventional' position where our decisions derive from broader considerations.

To understand how people move toward 'broader considerations' during their professional life, Levinson *et al.* (1978) devised four major developmental stages: childhood and adolescence, early adult transition, mid-life transition, and late adult transition with each stage requiring a coming to terms with imbalances.

Daloz (1986: 65) contrasted this 'stage theory" with 'phase theory' as a way to achieve balance. He described Keagan's (1982) version of the evolving self where our lives can be understood as a series of tranformations of how we see ourselves in relation to others *(Figure 2.6)* From impulsive children, we move to an 'interpersonal balance' when we redefine ourselves through others. We may do this not only as teenagers, but also again in later life. When we reach an 'institutional

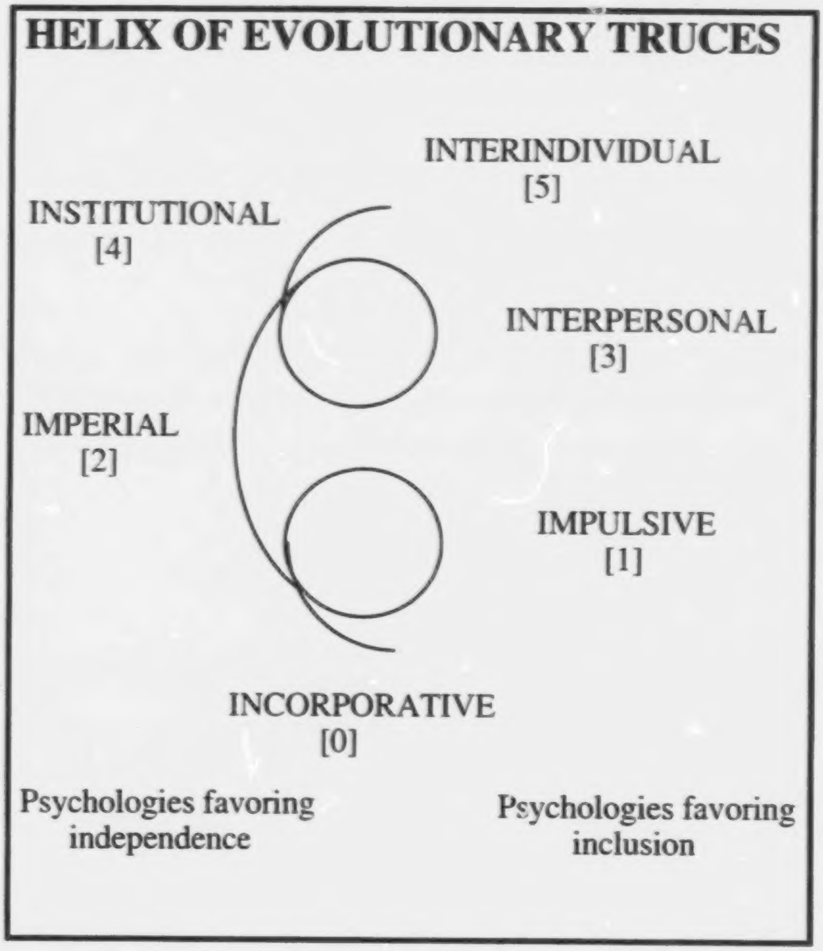
HELIX OF EVOLUTIONARY TRUCES
INTERINDIVIDUAL
[5]
INSTITUTIONAL
[4]
INTERPERSONAL
[3]
IMPERIAL
[2]
IMPULSIVE
[1]
INCORPORATIVE
[0]
Psychologies favoring independence
Psychologies favoring inclusion

Figure 2.6 Keagan's (1982) phases of development seen as a series of personal balances leading from self-centredness to mutuality to a new synthesis between 'self' and 'others' (in Daloz 1986: 67).

transformation', we define ourselves in terms of our own efforts and our voluntary adherence to abstract principles. Finally, we may yield to something greater than ourselves, another transition that involves both reaching out and a letting go. This phase of inter-individuality is often filled with compassion for others and new personal spirituality. The understanding of life passages is important to this study since the mentoring relationships of the leaders are placed in autobiographical context. This will be highlighted in the narrative stories in Chapter Five.

Staff-development during early career phases was studied by Joyce and Showers (1980) who found that techniques such as lectures, open forum discussions, performance tryouts, brainstorming, agenda setting, buzz groups, fishbowls, demonstrations, structured discussion and role plays are valuable for pre-service training or early career stages where skills acquisition and introduction to knowledge are the goal. However, for veteran staff, in-service is more effective for acquiring sophisticated knowledge and higher levels of competencies because it is built upon an experiential base.

Wood, Thompson and Russell (1981) cautioned that since professional growth is a complex, human task, it requires a climate conducive to learning and change. It should be based upon clear goals and objectives derived from careful needs assessment and be promoted through the use of diverse resources. To be effective it needs time for achievement, field testing, feedback and adjustment.

2.4.2 Professional Development, Mentoring and Leadership

In 1901 James Penny espoused the first philosophical framework for mentoring as a method of professional development for business leaders. To create a system of manager-partners for his dry goods store, he believed "that the manager who trained good men would profit commercially from the protégé's success and spiritually by guiding others to a good and useful life" (Roche, 1979: 24).

Shea (1992: 24) asserted that "some of the best mentors are those who assume that they, as well as their mentorees, are in a lifelong process of self-development". To accomplish this level of professionalism, he suggested three methods. Firstly, focus on basic principles and fundamental truths. New challenges require constant reassessment, discussion and even argument until new wisdom is formed. Secondly, keep abreast of new developments and their implications which implies that the mentor's self-development and learning is never finished. Thirdly, understand that mentoring is a self-evolving field because mentors must continue to hone their own skills of active listening, provide challenges to their mentorees and learn new methods for resolving conflict.

Batayola (1987: 20) researched a mentor program for professional development within the US federal government. Several factors for a productive relationship were indicated: careful matching, training and orientation to clarify roles and expectations, and a feedback and monitoring system. Two images emerged from the debriefing of these mentor experiences. One was the 'ordered society' view, that is, the mentor provides information giving no 'false hope' or 'painting a rosy picture'; the other stressed training protégés on how to 'survive the jungle' of a civilian career in a military setting.

Mentoring can be a career training and development tool for upward professional progression for both men and women according to Hunt and Michael (1981: 447). They described the dyadic mentorship model of Shapiro *et al.* (1978) in which there is a power-dependency status *(Figure 2.7).*

		Gender of Protégé	
		Male	Female
Gender of Mentor	Male	Cell 1	Cell 2
	Female	Cell 3	Cell 4

Figure 2.7 A gender based typology of mentor-protégé relationships (Shapiro *et al.*, 1978).

The female to male mentoring relationships in Cell 2 contained fewer numbers. This was attributed to either women protégés not identifying with male mentors and thus not developing effective relationships or due to the complexities of women needing to balance career and family responsibilities. Other researchers, however, found that successful female executives not only had supportive male mentors early in their career (Hennig, 1971; Adams, 1979), but also sought them out much like young adult males (Stewart, 1976).

The literature revealed a paucity of female mentors in the traditionally male-dominated career fields of the seventies (Sheehy,1976; Shapiro *et al.*, 1978; Cook, 1979) yielding a near void for cells 3 and 4 of the typology. Relatively few women had acted as mentors, according to Hunt and Michael (1982: 477) who suggested that "female mentors of male protégés within male dominated careers such as business, academia, and the professions would seem to require a high degree of position and career security". But they acknowledged that this cell had not been examined for female-male mentoring in traditionally female careers such as nursing and flight attendants.

It is important to review the gender based literature regarding mentoring and professional development since instances of all four cell types were found in the concurrent data analysis and literature review. The researcher has modified the chart by Shapiro *et al.* as shown in *Figure 2.8* to reflect current research. This results of mentoring for each cell from this study will be reported in Chapter Six.

As pointed out by Torrance (1984:7), Halcomb (1980) and Quinn (1980) argued that same sex mentors can serve as effective mentors. However, women with male mentors reported a "greater need for a more personal or friendship relationship than did their counterparts with female mentors". Women today continue to stress the need for a personal as well a professional aspect of a mentoring relationship (Segerman-Peck, 1991, Limerick *et al.*, 1992; Matzek 1995).

		Gender of Protégé	
		Male	Female
Gender of Mentor	Male	Cell 1 Jennings, 1971 Orth and Jacobs, 1977 Levinson et. al., 1978 Roche 1979	Cell 2 Hennig, 1971 Stewart, 1976 Adams, 1979 Halcomb, 1980 Quinn, 1980 Kram, 1983 Bowen, 1985 Segerman-Peck, 1991 Limerick et al., 1992
	Female	Cell 3 Clawson and Kram, 1984 Paludi et al, 1990	Cell 4 Noe, 1988 Byrne, 1989 McKeen, 1989 Arnold and Davidson, 1990 Burke and McKeen, 1990 Heywood, 1990 Limerick, Heywood and Daws, 1994 Matzek, 1995

Figure 2.8 A contemporary sample of gender based mentoring research .

In considering mentoring, professional development and leadership, Hunt and Michael (1982) concluded that the advantages for organizations are that 'former protégés' (versus non-mentored executives) are better educated, better paid, less mobile, and more satisfied with their work and career progress. Importantly, they suggested:

> Professions as a whole also may benefit from mentoring relationships. Mentorship helps produce active members in a professional society who are self-confident and knowledgeable enough to become successful scholars. This enrichment may be ongoing. Research has shown that professionals who are mentored themselves are likely to become mentors of succeeding generations of professionals. A series of mentoring relationships thus is begun.

Vance (1982: 7), speaking of the nursing profession, proferred the suggestion that "mentor connections may also enhance and sustain professional groups". In her study of influential nurses, eighty-three percent reported having one or more mentors and ninety-three percent reported that they were mentors to others. Kram's findings (1983: 608) are consistent with those of Vance as she found that the "primary task of middle adulthood is one of *reappraisal* and the mentor relationship has great potential to facilitate career advancement and psycho-social development in both early and middle adulthood".

Roche's survey of business executives (1979: 15) also found that "respondents who benefit the most from an experience with a mentor seem to feel a stronger obligation to extend mentoring to others". They rated their own mentor's influence on their career as 'extraordinary'. Additionally, he reported that "executives who have had a mentor earn more money at a younger age, are better educated, are more likely to follow a career plan, and, in turn, sponsor more protégés than executives who have not have a mentor". He called this a 'ripple effect'. Significantly, although both groups work the same long hours, those who have had a mentor are happier with their career progress and derive somewhat greater pleasure from their work". This idea was germinal to the researcher in exploring the continuation of mentoring among the leaders of this study.

Levinson *et al.* (1978), mentioned in earlier sections, also found that, during their twenties, men would often find a mentor who embodied their 'dream' and who could help them move toward it. They were proof that the dream could be fulfilled. Those mentors tended to be half a generation older and the average relationship lasted up to ten years. The authors observed that after the age of about forty, men rarely have mentors because they have outgrown their readiness to be the protégé of an older person. However, Roche (1979) found that while most of the top executives whom he surveyed saw the first fifteen years of their career as a period for learning and growing, more than a quarter of the top executives that he surveyed became protégés during the second decade of their careers. As for mentors, Roche showed a resurgence of mentoring after age 55 when older executives approaching retirement may have a greater desire to pass along what they have learned.

Looking at the timing of becoming a mentoree and a mentor was an important consideration of this study.

Does one always have to be a young protégé in order to benefit from mentoring for professional development? Daloz Parks (1993: 221-2) presented a case for mentoring of young adults as they shift their locus of control from imposed authority (parents, schools) to one which "now depends on an authority one has 'chosen'". An appropriate mentor at this time is one who recognises and honours the potential of the young adult, while pointing the way toward fulfilment of that potential. She felt that mentors alone are not sufficient to serve the company, trade or profession in a manner continuous with the past; for the future, she suggested a "mentoring community".

> What I mean by this is that the young adult requires a sociality that by its very character confirms and beckons the promise of young adult life. Such a network of belonging is not constituted only by other young adults, but also by a mentor or mentors - older adults who, less by admonition than by example and encouragement, offer images of the future that attract and anchor the emerging potential of young adults.

This position on mentoring also makes sense for adults who may be re-entering the workforce. Because most early studies concentrated on mentoring in the workplace, Daloz (1986: 17, 19, 33-4) felt there was a gap in the research regarding mentoring as a "development of the awareness and emotional maturity more appropriate to caring for oneself and others". He employed the metaphor of a journey to argue that learning experiences for adults returning to education could become transformational when aided by the intuitive wisdom of a mentor.

> Mentors are creations of our imagination, designed to fill a psychic space somewhere between lover and parent. Not surprisingly, they are suffused with magic and play a key part in our transformation. But always the mentors appears near the outset of the journey as a helper, equipping us in some way for what is to come, a midwife to our dreams. ... Mentors have no more meaning without students than answers without questions.

Returning students who are surrounded by forces which seem greater than themselves, sometimes fear a potential mentor or simply do not recognise the possibility. Teachers of adults should value the student's previous life experiences. As they are not novices in every area, this new journey may have less to do with 'growing up' than with 'development of identity'. This may be why Daloz (1986: 58) distinguished the hallmarks of a mediocre teacher and a good mentor, maintaining that the latter engenders a passion which is central to learning and has the capacity to provide emotional support when needed. He noted that mentors may be seen as those who "have transcended polarities and become transcultural figures, people who move beyond the 'normal' limits into a barely comprehensible world that calls to us and into which they are uniquely empowered to lead us".

Daloz countered some of the literature on hostile or indifferent endings of relationships saying that "if the mentor is capable of letting go of that power so that the relationship can be genuinely reciprocal, the odds favour a lasting friendship". The idea of 'respect' will allow the mentoree to hold both the earlier hierarchical form and the new equality. Speaking of one student, he said: "She can continue to honour her teacher, while cherishing a new friend".

Likewise, mentoring may be applicable to people who are already competent in one field and find a mentor who opens up a new professional direction for them. Zagumny (1993) addressed part of this issue when writing about mentoring as a tool for change. Mentors have typically achieved 'more' than the mentoree, but the 'more' does not involve all aspect of the mentoring relationship. He gave the example of a mentored person who may be a more accomplished researcher than the mentor, but the mentor may be a more accomplished classroom teacher.

The professional development of employees must be allowed to develop personally and individually. Referring to Maslow's (1943) "self-actualisation", Zagumny (1993: 44) stated that "elements of freedom for internal growth must be maintained during the growth process". He suggested that social learning theory can be the ground work for developing mentoring relationships or systems that lead to planned organisational change. In citing Bolton (1980), he argued that mentors are models of behaviour for their mentorees and this is rewarded within an organisation. Therefore mentoring relationships should avoid 'punishment' and their 'reinforcement' should increase the speed of learning over the more common trial and error method of learning. This is accomplished by observational learning followed by learner practice of the new behaviours as conceptualised in *Figure 2.9.*

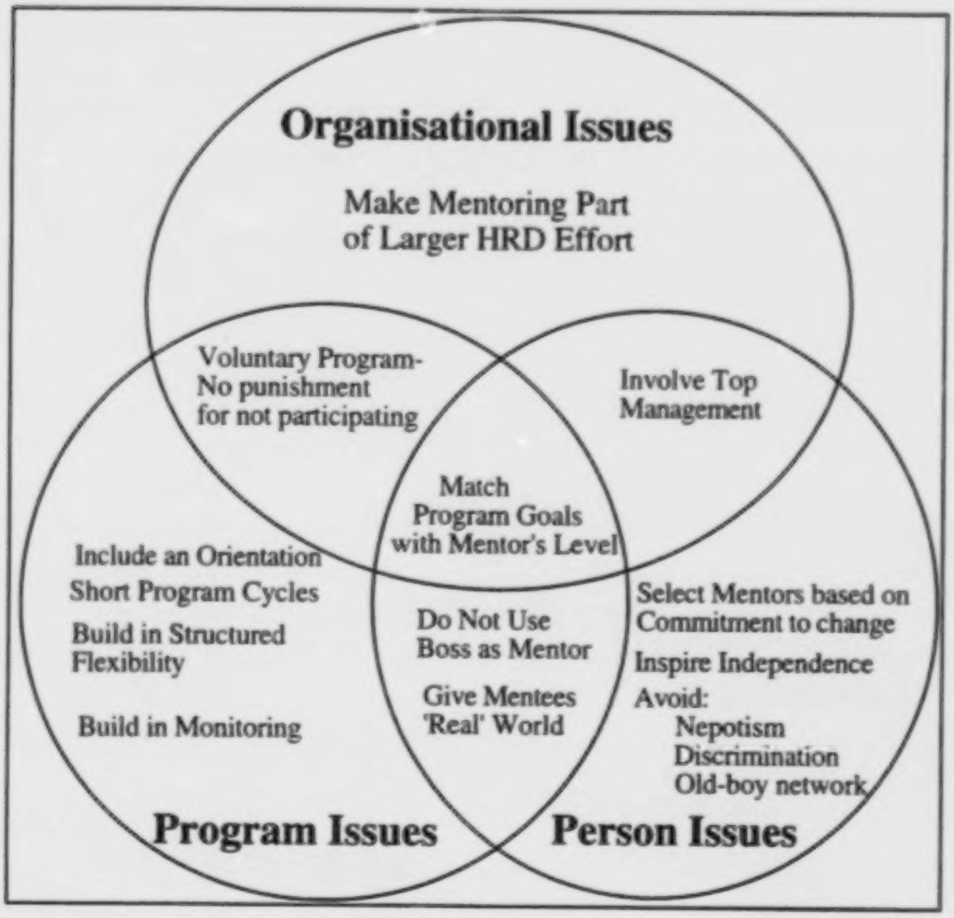
Organisational Issues
Make Mentoring Part of Larger HRD Effort
Voluntary Program- No punishment for not participating
Involve Top Management
Match Program Goals with Mentor's Level
Include an Orientation
Short Program Cycles
Build in Structured Flexibility
Build in Monitoring
Do Not Use Boss as Mentor
Give Mentees 'Real' World
Select Mentors based on Commitment to change
Inspire Independence
Avoid:
Nepotism
Discrimination
Old-boy network
Program Issues
Person Issues

Figure 2.9 Conceptual connections between mentoring and professional development: Zagumny's elements of establishing an effective mentoring program for change (1993: 45).

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In a research study looking at graduate trainees mentored by senior management, Cameron *et al.* (1992) stated that adult learning processes must be activated in order for mentoring to succeed. They proposed a method of combining formal mentoring with action learning since the two processes showed a number of common attributes such as shared development, team problem solving and learning from each other. Supporting Mumford's (1991) position that learning is a function of a mentoring equation, Cameron *et al*. (1992: 280) stated:

> Revans (1992) explains action learning by arguing that people learn best by thinking about how to do a task. This fits closely with the management development requirement usually encountered in formal mentoring, because the requirement is for an individual to learn and demonstrate the ability to take effective action ... not just to answer questions, but to pose questions.

Bova (1987: 119) argued that one way adults learn to question themselves and their worldview can be through a mentoring relationship. He quoted Missertian's (1982) definition of a mentor which fits the concept of "one who shares the 'dream' - not necessarily a consciously formulated career goal, but rather a cherished perception of self". Bova categorised his findings for facilitating mentoring relationships in the workplace as: risk-taking behaviours on the part of the protege, communication skills for both, political skills, and specific skills related to their profession. Bova elaborated his ideas, based on Lester (1981).

> Mentoring is a basic form of education for human development because it provides a holistic, yet individualised, approach to learning. Adults who work with mentors grow in their sense of intellectual competence, as well as in their sense of purpose, their feelings of autonomy, and their personal intergrity. Mentoring is also a good example of experiential learning.

Since many of the participants in this study are teachers, it was relevant to examine research regarding their personal and professional development. Fullan and Stiegelbauer (1991) pointed out that mentoring has become important in the professional preparation of teachers as an offshoot of 'induction'. It has opened up new opportunities for professionalism, which also exposes logistical and normative constraints to changing the culture of schools and teaching as a profession. Using Anderson and Shannon's (1988) definition for mentoring as "a nurturing process ... carried out within the context on an ongoing, caring relationship," the model has been applied to school associates working with student teachers, beginning teachers in induction schemes, new teachers in alternative certification programs, and for 'career ladders' training for leadership roles. At least in the teaching profession, the formal role of mentor may clash with some of the individualistic traditions of teaching.

Coombe (1989) gave that same warning when speaking of mentoring of early childhood teachers in Australia. The challenge is to introduce this new concept to teachers and to introduce it in an institution and occupation in which it has had few precedents. Fullan and Stiegelbauer (1991: 309) concluded that mentoring is a powerful strategy for professional improvement, but that to be effective, it must "be supported by and contribute to the development of 'collaborative work cultures.'"

Mellor (1995) discussed the school environment as a factor influencing the professional mentoring relationships of new high school teachers. She found that not only the nature of the subject itself and teaching the same subject area are important, but also that the physical environment contributes to enhancing the process of mentoring and collaboration. She recommended that mentor and 'mentee pairs' should be placed in close proximity to each other in staff-rooms and in their teaching situations wherever possible.

By categorising how teachers within schools view the curriculum they must teach, Kemmis, Cole, and Suggett (1983: 9) have suggested ways they might view themselves and, therefore, their own needs for professional development. Three of these are described below.

> *Vocational/neoclassical* is an orientation in which education is understood as a preparation for work, with proponents seeing themselves as 'realists' and the world as hierarchically ordered. Education reflects the principles of a wider society. It is 'neo-classical' in that the substance of education is based on 'time honoured' beliefs about what is worth knowing.

Liberal/progressive is a view which sees education as a preparation for life rather than just work. It considers the 'whole person' by developing personal values, which can impact on society's future citizens. It is 'liberal' in that education should develop individuals capable of reasoning about issues which applied to the greater society.

Socially critical is a position which argues that education must prepare students to confront changes in social structures while at school. By using critical reflection, social negotiation and organisation of action, their collective action will empower schools and communities to confront unjust and irrational social structures.

Considering the controversial nature of environmental education topics, it is important that educators, be they in schools or other settings move toward positions which will empower people to take action for the environment (Fien, 1992). Because this is not always easy to do in a school situation (Maher, 1986), the idea of having or becoming a mentor is important to environmental educators. *Table 2.4* illustrates three sections from the authors' eighteen point matrix showing that teachers can act as 'mentors' and 'leaders' who can influence students to take socially responsible actions. This teacher leadership can be broadened through continued professional development such as 'in-service education'. Words in bold were highlighted by the researcher to show relevance to this study. Kemmis, Cole and Suggett stressed that mentors try to foster autonomy in their mentorees, that leadership should be based on personal relationships and that in-service or professional development can leads to self-reflection of ideas..

Table 2.4 A partial matrix (1983) suggesting teachers' orientations towards mentoring, leadership and professional development.

VIEW OF	VOCATIONAL/NEO-CLASSICAL	LIBERAL-PROGRESSIVE	SOCIALLY CRITICAL
TEACHER'S ROLE	An authority, transmitting knowledge, structuring and sequencing what is known to allow the students to achieve mastery	A '**mentor**' or facilitator, organising learning opportunities to allow the student to take advantage of opportunities and achieve autonomy	A project organiser and resource person, organising critical and collaborative activities in negotiation with students and community, demanding joint values of autonomy and social responsibility
TEACHER-STUDENT RELATIONSHIPS	Teacher is in authority, uses directive pedagogy, controls progress; a hierarchical relationship imposing learning; uses affection for motivation; based on one -to-many relationships of teachers to students.	Teacher is a **leader** with recognised knowledge and concern for student growth; based on idea of one-to -one relationships of teachers to students.	Teacher is a coordinator with an emancipatory aim, involves students in negotiation about common tasks and projects; based on many-to-many relationships between community, teacher and students.
CONSULTANTS' ROLES	Expert outsiders specify new curricula, provide recommendations for changes to authorities; expert evaluators measure the extent to which desired changes have been achieved in implementation of programs.	Experts inform curriculum-building and change processes, but teacher take responsibility for decisions about what will be done in light of this advice.	Outsiders where they are called in for consultancy task are contributors to a collaborative school and community-based process; the school is collectively committed to self-reflection (eg through action research and school based **in-service education).**

According to Butler (1992c: 221, 225-6), professional development can lead to a critical reflection of one's personal and public knowledge about their teaching and this is appropriate for environmental educators. However, the author pointed out that much in-service training is episodic at best and often assumes 'the teacher as technician model'. He addressed the problem of professional development for Australian teachers by focusing on the individual teacher's knowledge, values, beliefs, assumptions and goals *(Figure 2.10)*.

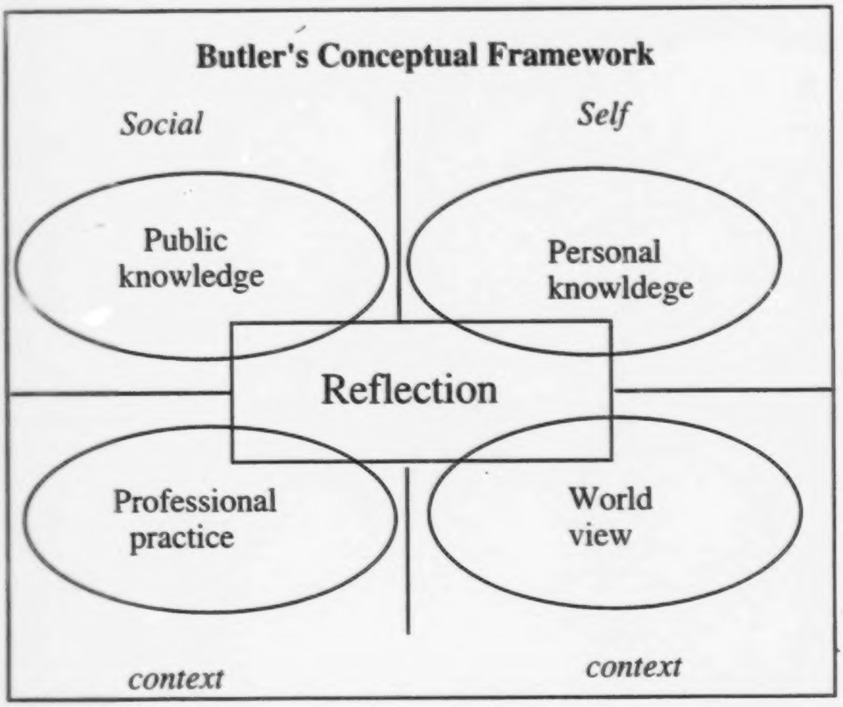
Butler's Conceptual Framework
Social
Self
Public knowledge
Personal knowldege
Reflection
Professional practice
World view
context
context

Figure 2.10 The components of a model of human action for improved teacher professional development (Butler, 1992c).

Butler's analytical framework requires one to probe one's own self-values and beliefs - why do we teach, what do we value in our teaching? It encourages us to reflect upon our world view which he defined as, "an individual's own way of looking at the world derived from tradition and culture and is therefore historical and contextual". This world view should be continually revised and transformed as our personal practical knowledge of teaching grows and our public knowledge or theoretical basis of what we do is challenged by new curriculum ideas, such as teaching environmental issues. This internal dialogue should be mirrored in our renewed professional practice.

Butler emphasised that "the certainty of information is never equal to the immediacy of action". To overcome the inertia of the theory/practice nexus, teachers undertook action research projects to look at their own professional development. Action research within this model is further explained by Beasley, Butler and Fairbrother (1990) as having three components: the teacher's self-improvement develops through a reflective spiral, it is collaborative and involves teachers hypothesising about their own practices, and it results in a reasoned justification of the teacher's practices. Butler aimed at extending Stenhouse's position that to understand curriculum development implies teacher development which implies self-development".

Logan and Beasley (1993: 4) adopted Butler's approach for middle management professional development as they looked at the issue of 'leadership and self'. They described five outcomes which are:

1. action strategies - things we try to do and get others to do; and the way we go about getting things done;
2. consequences for self - these are the end effects for ourselves or our action strategies and the way other people respond to our way of doing things;
3. consequences for others - these are the end effects for other of our actions strategies - things they are obliged to do or stopped from doing;
4. main value - these are the values we seek to express in our actions, our relations with people, our work; and
5. overall effectiveness - this is the measure of how much our main values are expresses in our actions strategies.

The literature background on teacher/leader/professional development is particularly important for this study since many of the participants are leaders who were not trained in education and educators who have had little leadership training. For many of them, mentoring formed the bridge for their professional development and this will be discussed in Chapters Four and Five.

Career development, either with or without the benefits of mentoring, should, in the end, lead to a balance. Severson (1994: 13) reasoned that a person's sense of individual and professional well-being should be developed around the three dimensions of security, choice and quality of life as represented in *Figure 2.11.* He also applied these indicators of 'personal security' to the whole community when describing his grassroots approach to solving environmental problems.

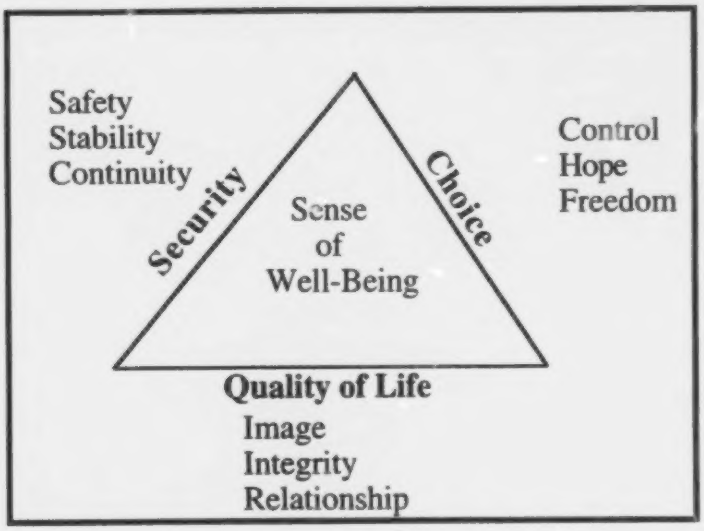

Figure 2.11 The relationship between values and sense of well-being (Severson, 1994).

It has been found that mentoring can enhance professional development in business, government and various levels of education as well as encourage the emergence of successful leaders. This study purposely chose leaders across a wide array of professional settings. It attempted to discover the range and effectiveness of the mentoring experiences of these leaders and concentrated on the commonalities across the relationships. Caldwell and Carter (1993: 218-219) concluded their book, *The Return of the Mentor: Strategies for Workplace Learning,* with several reflections appropriate to this study: "mentoring is a practice which can be nurtured in an enterprise that seeks to become a 'learning organisation', ... a range of models for mentoring is available,

... the commonalities across setting are more important than the difference". With these precepts in mind, the next section will illustrate how environmental education fits into this sector of professional development.

2.4.3 Professional development, mentoring, leadership and environmental education

2.4.3.1 Professional development - environmental or educational?

Robottom (1992a: 140) emphasised that the substantive topics of environmental education are 'educational' rather than 'environmental' and that professionally developed leaders can have important effects on consumers of environmental education. Yet he lamented the way we have approached professional development so far, looking more toward the needs of the researcher than the environmental educator.

> The behaviourism of the dominant approach to environmental education research confers a strongly deterministic character to professional development. It seeks to control (through prediction and reinforcement) certain ways of thinking and acting valued by the researchers. The dominant approach to environmental education research does not adopt a research perspective in respect to its own role in professional development (Robottom (1992 a: 139).

Samples (1971: 15) reflected on the educative process of environmental education which can move beyond content and behaviour:

> Traditional or didactic education stresses content ... the hidden agenda is content ... Process education stresses behaviour ... the hidden agenda is specified behaviour ... Self-directed models stress the intrinsic ... the hidden agenda is self-esteem. Environmental Studies emphasises the third.

Beull (1983) listed over thirty-five fields open to outdoor education leaders where the educative process and the environmental science emphasis can be meshed. These included jobs in: alternative energy, conservation, environmental studies, forestry, fundraising, natural resources and wildlife management. Professional development in this broad field requires not only specific science knowledge, but an understanding of environmental ethics and social perspectives as well.

2.4.3.2 Training in environmental education - past and present

Burack (1988: 117) noted, "it is not without irony that educational programs extolling the virtue of experience for their clients often fail to recognise its significance for training staff". Beull (1983) created a manual for outdoor leadership competency looking at self assessment and staff evaluation. His checklist for quality training programs did not refer to ethical or social issues, although he did suggest that one should be endorsed or associated with a professional organisation.

Sakhofs (1987: 16-17) emphasised the need to reorientate interpreter training programs for personnel involved in city, state and national parks departments, museums and nature centres. He noted that current training programs are 'object oriented programs' which see the nature interpreter playing a pivotal link between nature as an object for viewing or showing an ecological concept and the 'public'. He calls for a shift to 'people oriented programs' which should teach, cultivate and refine skills "to promote understanding and insights in the minds of interpretive program participants". He challenged those responsible for the training of future naturalists:

> They must assume a leadership role because they constitute the only institutional force which can effect change in this field. ... Through modelling interpretive strategies and restructuring training sessions to promote a people orientation over an object orientation, those who train interpretive professionals will promote in their students a sensitivity to the program participants. This in turn, undoubtedly will enhance the quality of their presentations, as it will enable them to tailor their programs to each audience they encounter and thus make them more enjoyable and educational for all.

Teshner and Wolter (1984) looked at ways leaders could improve the hiring, training and professional development of staff involved in wilderness trips where environmental education can be an objective.

They listed ideal characteristics and qualifications for a wilderness trip leader in five broad categories: personal characteristics, experience, skills, theoretical knowledge, and certificates. Personal characteristics are further described as: sound judgement, integrity, desire to learn, sense of adventure, high self-image, charisma, flexibility, commitment and energy, initiative and self-reliance, persistence, compassion, cooperative outlook, ablility to communicate effectively, acceptance of responsibility, awareness, creativity, sense of humour, maturity, being healthy and physically fit, positive role model, and having a person philosophy congruent with the employer. The authors (1984: 14) described a direction for professional development which was later echoed by Beasley (1990), Butler (1992) and Logan (1993):

> In our view, personal characteristics are, in fact, derived from experience (and associated reflection). ... Further, our use of the concept 'personal characteristics' refers only to those traits that are highly internalised and thus emerge intuitively. We do not consider behaviour or attitudes that are superficial or expressed in a highly conscious manner to be true personal characteristics ... For our purposes, we have defined staff development as an organisation's effort to promote employee growth: more specifically, helping staff move beyond present competencies toward perceived ideals.

Pre-service training was designed to meet specific organisational goals, but as staff members continued with the organisation, the goal-setting was shifted to them. Teshner and Wolter (1984: 23) advocated that "involving staff in the planning process (including informal needs assessment) invariably creates a climate of trust: in this sense the process is as important as the product ... it helps one move beyond ... to helping staff clarify their individual goals and needs. Who do they want to be? What do they want to become?"

Teshner and Wolter (1984) reiterated the philosophy of Carl Rogers and humanistic psychologists stressing that people intrinsically want to learn and grow and do their very best. They argued that personal growth may be more important to staff than pay and other benefits. Drawing on Maslow and Herzberg, the authors expressed the opinion that experience is a far more valuable indication of competency than skill alone, which is, in turn, more valuable that theoretical knowledge. They questioned whether staff burnout was more an issue of the absence of personal growth, than long working hours and high demands of a job.

Applying reflective professional development to wilderness experience, Simpson (1985: 25) noted that at the same time we are creating environmental debacles for our planet, we are also trying to create personal growth for transforming individuals. He pondered the development of ethics for environmental leaders, saying:

> However, wonder is not the same thing as an environmental ethic, and nothing suggests that one necessarily follows the other. No doubt providing awesome experiences and setting a good example would be more effective if the leader had 1) a clear understanding of his or her own environmental ethic, and 2) a background that included environmental studies, moral development and curriculum and development. With these skills, environmental ethics could be actively sought rather than assumed to occur.

Steinhart (1990a: 21-22) described how early park rangers were trained in the United States, many having formerly been Army professionals. In 1916 National Park Service personnel were required to have the qualification of being "of good character, sound physique, and tactful in handling people". Early visitors to the park felt that nature made men of courage and resourcefulness and the ranger was required to mingle with guests and explain nature; "the public saw them as having the bravery and discipline of soldiers, the eloquence of preachers, and the affability of schoolboys". However, as the national park system grew, the mission grew more complex; a ranger capable of trapping bear in Yellowstone might not have the 'street smarts' to quell the riot that took place in Yosemite in 1970. In times past, rangers who shot wolves had little sense of the ecological consequences. Today, the rangers must carry weapons and enforce environmental laws. As natural resource personnel, they must be concerned with issues as diverse as maintaining biodiversity and finding recreational areas for hang gliding. Steinhart (1990a: 23) concluded that, "it is difficult to hold out for character when the parks are increasingly subject to political influence".

Illustrating his point about personnel trying to educate about the environment and dealing with political pressure, Steinhart (1990b) described an incident with the California Fish and Game Commission. Today such legislative bodies are caught between a government which generally favours development over wildlife and a voting constituency that has grown environmentally aware, complex and vocal. The commission had to deal with issues such as establishing controls over importing exotic pets, policies for secondary treatment of sewage released into coastal waters, loss of wetlands and listing a species of salmon as endangered. The author noted (1990b: 115, 117-18):

> [there had been] a clumsy transition of the nation's largest state wildlife agency from a sportsmen's agency to a broader-based wildlife agency. ... The number of people who view wildlife wholly as a recreational or economic resource has declined. ... Many of these people are hunters, but far more are hikers, birdwatchers, and photographers who do not want to hunt. They advocate protecting wildlife as part of the larger goal of protecting biological diversity and expect wildlife questions to be addressed on the basis of biological evidence. ... Wildlife groups are more and more a mixture of members who approach wildlife from an ethical viewpoint and oppose hunting, and members who approach wildlife from an evolutionary viewpoint and condone hunting.

Magill (1992: 6) shared this concern about the ethical and values-laden questions that must be addressed by environmental professionals and questioned their current training. He reported that the majority of professionals responsible for managing outdoor recreation on wild lands in the United States are trained in natural resources such as forestry and landscape architecture. Because of this scientific perspective they may not be academically or psychologically suited to dealing with people issues such as understanding who the visitors are, what they are seeking and how to communicate with them.

Quoting Ewert, Magill (1991: 6) referred to the Forest Service's mission statement. He concluded that "social aspects and concerns should be as important in caring for the land and serving people as are ecological and silvicultural techniques". Magill proposed that those seeking careers in recreation management need to be better trained in natural resource principles and philosophy, social, political and communication sciences. He stated, "these courses are essential to provide the non-traditional solutions required of abstract problems and the development of social orientation".

Sakofs and Burger (1987: 23) expressed similar needs regarding the professional development of experiential educators. They emphasised that "true experiential educators choose not to work for institutions that offer facts and skills, but work for groups that seek knowledge and wisdom. Now these are inherent ethical issues worth discussing". To challenge clients regarding the ethical issues involving the environment, the authors suggested models of teaching have as their goal the assimilation of information at a level which transforms individuals in two ways, 1) it leads toward a Piagetian schematic shift in the individual's conception of self and therefore his/her interaction with the world and 2) it promotes a difference in the role the individual plays in his/her own education moving from passive learner to an active user of knowledge in and for the world. The authors likened it to the difference between managers and leaders where the former are more interested in 'doing the right thing', while the later want 'the thing done right'.

2.4.3.3 Improving environmental education leadership skills

To get 'the thing done right', Riggins, (1985) sought to determine the leadership characteristics of effective outdoor leaders so that he could develop criteria for the selection of instructors for a Colorado Outward Bound school. In looking at the summary of his findings, technical skills ranked first, followed by interpersonal skills and then personal qualities. Although attributes such as compassion, 'real life' experiences, and love of outdoors were mentioned, nothing relating to values, ethics or societal issues was recorded. Sakofs and Burger (1987: 24-25) depicted some experiential educators as:

> ... just young, idealistic kids who choose a romantic lifestyle which they soon realise barely enables them to pay the bills and so they soon grow bored and leave the job. Those who stay ... find their lives caught up in routine, planning for lessons which they have taught

> countless times ... and thus the essence of anything profound is lost to them and they become cynics.
>
> A person could use experiential techniques, include the learner, have them reflect on actions ... and still not be powered by deeper purposes.

Those 'deeper purposes' which Sakofs and Burger mentioned can be found within the job through improved in-service techniques or possibly through a career change. Langton (1984: 30-31) had commented earlier on problems with the job market in environmental organisations. His study comprised in-depth telephone interviews with twenty-four well-known executives of environmental organisations who had outstanding reputations among their peers. They reported "low pay, high turnover, a glut of qualified candidates, and few opportunities for advancement. The chains of command are short. ... This can lead to a lot of frustration and burnout". Langton recommended holding annual retreats for staff and continued training that blended environmental leadership with management skills.

In speaking of a change from outdoor or experiential environmental leadership to business training and development, Teschner & Wolter (1984) noted that to make major changes in lifestyle and careers, you must be ready to 'let go'. People who have successfully made these changes probably had already come to terms with a change in their image and did not see a compromise with their values.

Further education and training may be a chronic problem for self-directed conservation leaders who are caught between the need for good educational programs, fundraising, and good leadership according to Roush (1992: 26) who pointed out (italics added):

> According to the United States Conservation Leadership study, the average conservation leader spends over 70 percent of his or her time on fund-raising, planning, board development, personnel, membership development, public speaking, and media relations. He allocates less than 29 percent to program implementation and programmatic research, and spends *only 2 percent on personal and professional development.*

Given the report's repeated themes of underpaid staff, overcommitted boards, overworked volunteers trying to deploy inadequate resources for complex issues, Roush argued the need for professional development. He advocated creating, supporting and taking advantage of opportunities for leadership training and felt that the qualities needed by conservation leaders are the same as those shared by all leaders. Some leadership traits which can be learned are: creativity, systems thinking, understanding your own strengths and weaknesses, drawing on a breadth of knowledge and being able to express the environmental education vision persuasively.

Gardner (1990) advocated that although tomorrow's leaders will probably have been trained as specialists, they should rise above the boundaries of their discipline and be able to see the design and function of whole systems and how they may be constructively managed. Snow (1992a: 210-11, 219) referred to this as "Gardner's enlightened generalists who emerge to lead innovative public movements". Snow's survey regarding academic training and professional development showed that the conservation movement cannot expect academia to provide the kind of training needed for conservation leaders. He stated, "It is abundantly clear from these data that the national conservation-environmental movement must continue to develop its own network of training programs for its own emerging leadership". He recommended "a 'mentors program' wherein promising young student leaders receive part of their academic training through exposure to accomplished conservation NGO leaders who would be most helpful".

2.4.3.4 Mentoring as part of professional development for environmental education leaders

A mentoring approach to professional development would contrast with on-the-job training which is still used to prepare resource-trained personnel to deal with complex environmental problems fostering repetition of past techniques and stagnation of thought (Magill, 1992). Teschner and Wolter (1984) suggested pairing new staff with veterans who can act as role models and mentors. They felt that formal identification and development of (senior) people to assume mentoring or counselling roles often proves a decisive factor in the enculturation of individuals. It is this 'enculturation' which is vital to leaders in environmental education.

The onus for professional development comes not only from the trainer, but from the recipient as well. Environmental educators have an obligation to foster their own professional development according to Siebert (1983). He described the 'synergistic survivors' who seek to improve their environmental professionalism as having four traits: 1) they transcend polarities; are flexible and adaptable, 2) they have a motive of synergy - need to have things work well for themselves and others; show selfish altruism and interconnectedness, 3) they have inborn drive to affect our environment; stress positive action versus hopelessness, and 4) they can learn directly from life's experiences and are intrinsically motivated.

The self-motivated environmental educator also needs to plan his/her career growth, especially after experiential jobs such as "Outward Bound". Biel (1986: 6-11) offered eight ideas to aid in this endeavor including the specific recommendation to build mentoring relationships. Italics have been added to emphasise the link with mentoring.

1. Identify and record your career goals; goals are not static and should grow as you grow. In what way would you prefer to spend the next three years of your professional life?

2. Exhibit a successful attitude - recognition for achievements, developing new relationships.

3. Diversify your experiences, rely on contacts for entrance into other fields; define yourself by actions not intentions.

4. Nurture associations and build networks within the field - conventions, journals, special interest groups; outside the field - applicable knowledge for business, social services, medicine.

5. *Build mentor relationships - you share the mentor's contacts and associates and your progress is a reflection of the mentor; the mentor provides counsel and advice, gives access to new role models in other fields; seek out individuals whose work you admire; offer your services to them.*

6. Display your work and abilities beyond your normal scope of exposure - speeches, writing articles, joining associations, presenting at professional conventions, teaching.

7. Expand your job universe, examine your background and interests.

8. Constantly work on your career, stay in tune with the job market, even though happy in job; don't wait till job threat.

Biel, like the other authors in this section, stressed the need for improvement in professional development of environmental educators and suggested that mentoring is one avenue to accomplish this change. Several issues emerged from this list for the researcher to explore with her participants. Did they build mentoring relationships? If so, how was their professional development fostered by a mentor? How did a mentor help during career transitions? Did they use networks of the mentor?

2.4.4 Synopsis of the sector of professional development

If twenty years of mentoring research in the fields of business, nursing and education have shown benefits to those professionals, then, perhaps it points to a future pattern for environmental education. Mentoring was presented as an active pathway for an environmental education leader to aid his/her own professional and personal growth. The personal and professional support, trust and respect shared in a mentoring relationship can bolster environmental leaders as they are challenged by complex scientific, social and ethical issues.

Shea (1992: v) stated that "there is a new form of mentoring evolving that better suits the downsized, high-tech, globally competitive firms that are emerging in our society. The concept of mentoring is no longer tailored to the tall hierarchical organisations, an old milieu which was paternalistic and nurtured the *status quo*". The newer definitions involve transformational leadership through continued learning and growth on the part of both mentor and mentoree and are more appropriate to the field of environmental education.

Roush argued in *Conservation's hour: Is leadership ready?* (1992: 38) that once conservation groups get beyond local successes such as protection of specific places or species, national and global victories are hard to come by where issues like air, oceans and the biosphere are concerned. Because the political and social level is where the real staying power of environmental education lies, he recommended six steps for enhancing the professional development of leaders who must continue this work. These are (italics added):

1. become obsessed with communication - connect laterally and vertically with other leaders;
2. create, support and take advantage of opportunities for leadership training - many of these qualities can be learned;
3. think strategically - ask questions like what can your organisation do that is useful for people as well as for the natural world;
4. act for the movement - gain power by sharing knowledge with other leaders, *become a mentor, and you will strengthen both the movement and your own organisation;*
5. broaden the movement by broadening your organisation - change your organisation to serve the community, include ethnic minorities and women; and
6. broaden your organisation by striking new kinds of alliances - business can contribute technical expertise, government can coordinate societal goals, non-profit agencies can emphasise a concern for externalities, education and vision.

Roush acknowledged the inspiration of great American conservationists such as John Muir, Gifford Pinchot, Bob Marshall, Aldo Leopold and Rachel Carson who saw a need for action and thereby gave purpose to organisations. He also stressed (1992: 40) that "for a conservation leader in the late twentieth century, the organisation is the only tool available. The leader carries the vision. The organisation supplies the voice".

Gumaer Ranney (1992: 127, 132) agreed with this 'corporate view' of Roush's when she took a job with the Wilderness Society. She felt that there was more opportunity to influence policy through an organisation than as an independent agent. It was in this setting that she met two mentors whom she described as having "extraordinary vision, knowledge, and dedication to conservation who taught me politics and professionalism". She explained this concept further in her 'guideposts to the leadership labyrinth' for women in the conservation movement.

> Find a mentor and be willing to mentor in return in later years. Studies show that most leaders have mentors along their career paths. They also reveal that women are less receptive to mentors than men. Mentoring provides continuity and cohesiveness, insights and guidance that are hard to come by in any other way. The corporate world has used this principle for decades.

On the one hand she encouraged women to look for a mentor, yet assumed that women are less receptive to mentoring than men. She did not explain if this hesitancy is a function of opportunity in the male dominated conservation field or the constraints of women who must juggle family and career responsibilities (Limerick, Heywood and Daws, 1994).

Roush pointed out how the leaders might act as mentors, but he did not pursue how their own professional development might have been influenced by mentors. Lorenz (1992) suggested training new conservation leaders by assigning them to work with more experienced people who could serve as mentors. However, he also gave no indication of the process to be followed. Gumaer Ranney went one step further and described her mentoring and, like Biel, suggested the benefits of such a relationship.

The review of literature for the sector of professional development raises questions pertinent to the study of environmental education leaders. Will leaders in the field who have benefited from mentoring be willing to spread their influence to young practitioners? Might they also be willing to mentor mid-career professionals who have become more reflective about the serious issues concerning sustainability of the planet? Will professional development continue to replicate the dominant practices of the past (Fien, 1992; Robottom, 1992a; Smyth, 1989) or will mentoring become a key to improved professional development for environmental educators? This study attempts to answers to these questions through an "interplay of reading the literature and doing analysis of it, then moving out into the field to verify it against reality" (Strauss and Corbin, 1990: 55). This process called 'theoretical sensitivity' drives the researcher back to literature with refined interest.

2.5 Summary

This review of the literature reveals that there has been abundant research in each of the discrete fields of mentoring, leadership, environmental education and professional development. Different methodologies have been used to inform the mentoring literature. Kram (1983: 610) described her methodology for studying mentors (after Reinharz, 1979) rationalising that "methodological decisions were guided by the premise that an appropriate research strategy emerges from careful consideration of the interaction of the problem, the method, and the person-researcher". Even though the primary data contained individuals' subjective experience of the relationship, Kram felt in-depth interviewing of a small number of individuals about their career history was essential to understand the relationship's characteristics, as well as having the advantage of mutual learning for both investigator and participant. Flexible data collection is also needed due to the exploratory nature of the research problem that will allow unpredicted aspects of the phenomenon to arise (Tesch, 1989).

Not all agreed on the quality of mentoring research. Speizer (1981) argued that the idea that a mentor is essential for career success has not been validated because the early studies focussed on white, female students and showed methodological flaws including numbers too small to generalise from a highly selected small, atypical sample. It was felt that the information had a retrospective bias inherent in trying to assess what caused measured differences and that the concept of mentor was left undefined.

While Shapiro *et al.* (1978) have pointed out the need for further investigation into how mentors choose their protégés and how protégés find their mentors, Burke & McKeen (1990) identified twelve other aspects of mentoring which need further investigation.

1. antecedent and consequences of mentoring;
2. the impact of changing notion of career;

3. availability of mentorship to women;
4. barriers experienced in mentorships;
5. attention to mentorship processes and cross-gender mentorships;
6. mentorship created by women;
7. characteristics of protégé who benefits from mentoring;
8. the extent to which formalised mentoring programs help individuals and organisations;
9. factors which explain spontaneous formations of such relationships;
10. different reasons for why men and women select protégés;
11. the influence of gender differences in the developmental relationships; and
12. the role of demographics, attitude and gender in the mentoring process.

Other topics identified for further research include lack of access to information networks, use of ineffective power bases to establish mentorships, influence of stereotypes (Noe, 1988); seeing the mentorship process in the wider context of the institutional ecology of higher education, needing a policy debate in universities and institutes to improve awareness and understanding of mentorships, identifying formal and informal models, becoming a conscious corporate management goal in academia; needing in-service programs to increase understanding of the mentorship process (Byrne, 1989).

Hunt and Michael (1982: 484) concluded that "longitudinal research is necessary in order to examine the time frame, stages, multiple and second careers, multiple mentors, and other dynamics affecting mentorship. They recommended that future research should examine all four cells in the gender typology of Shapiro *et al.* (1978) which includes female to male and male to male mentoring. Some underlying commonalities among mentoring experiences in the fields of business, nursing, education and environmental education have been identified from the literature review.

1. Mentoring relationships provide an opportunity for mutual benefits for the protégé and the mentor.

2. The mentor notices the potential of the protégé.

3. The protégé is attracted by the maturity and knowledge of the mentor, as well as, by the opportunities that may result from this relationship.

4. Mentoring is important for the professional development of the protégé.

5. Mentors may be older persons, as opposed to those of similar age known through network connections.

The field of environmental education has been the focus of considerable research into its purpose, the curriculum, teachers' and students' attitudes, concepts, values and behavioural change, and an evaluation of its research methodology. Only a few books have been written specifically about environmental leadership (Langton, 1984; Snow 1992a, 1992b; Berry and Gordon, 1993). Although these refer to professional development, they rarely mention mentoring. The reason for this gap in the research may be that mentoring among environmental educators has been informal and serendipitous. Without a more formal recognition of the mentoring process and research into its importance for leaders, the contribution of mentoring to the professional development of environmental educators remains nebulous.

The time has come to ask these questions. Have successful leaders in the field of environmental education had a mentor? How prevalent are these relationships? Is the political and socially sensitive nature of environmental education conducive to forming this type of close, human relationship? When is mentoring most likely to occur? Are leaders who have had a mentor different from their peers? If so, in what ways are they different? Does mentoring lead to a 'better' job, more money, more responsibility, better professional skills and a more grounded personal philosophy? What are the implications of formal versus informal mentoring for environmental educators? How effective is a mentoring relationship for someone in an environmental education leadership position? Does this kind of mentoring relationship get passed on to other potential leaders?.

There is a need to explore the potential differences between the business model of mentoring with its increased salary tied to executive performance, the educational model which is allied to advancement into administration, the nursing model which is interested in proficiency of skills and the kind of mentoring which has taken place in environmental education which might enhance career development and leadership. What, therefore, will distinguish this study? Its purpose is to define the mentoring relationships that have been experienced by leaders in the field of environmental education, to find out if they match models currently explicated in the literature by other professions such as business, education, and medicine, to see if they follow a practical schema that allows for career growth, more money, more skills, or do they follow a more classical definition of 'mentor': becoming a counsellor and friend throughout life.

Another important goal of this thesis is to explore the influence that mentors and protégés may have had on others. Roche (1979) stated that "while on the average executives had two mentors, they sponsor 3.3 protégés ... If this 'rippling effect' continues, many more executives in the future will benefit from the experience of older managers ... mentoring will become even more important in accelerating the learning curve of young executives". Should the research data of this study show that these environmental leaders were mentored and that they are willing to mentor new protégés, there will then be implications for the direction of professional development in environmental education.

It is the experiences of those leaders and their relationship with their own mentors and new mentorees that may hold a key to understanding professional development not only for promising, young protégés, but also for the mid-career professionals who are reassessing their philosophical positions in an ever-increasing politically and socially controversial field of education. If we can understand the key relationships between the leaders, their past mentors and their new mentorees and appreciate the advantages that may be offered by such relationships within the context of environmental education, then perhaps we can promulgate more effectively the stewardship of human being for human being and humankind for our one earth.

This literature review has indicated the wealth of information on the general topics of environmental education, leadership, mentoring and professional development and has shown the links between those topics. It has also highlighted the paucity of specific research about the mentoring of leaders in environmental education and the implications for their professional development. Therefore, the four major research questions posed by this study are relevant and will extend the theory of mentoring in the field of environmental education. Chapter Three explains how this study was designed and accomplished.

Chapter Three

3.0 Introduction to the Research Methodology

Chapter One introduced the purpose of this study which was to understand the significance of mentoring relationships during the careers of selected leaders in environmental education. The leaders include a broad range of teachers, community persons, natural resources and government agency personnel. It argued that if these leaders are to pass on the benefits of mentoring then it is necessary to gain insight into the mentoring relationship of those who have had these experiences. Chapter Two presented a review of literature which placed mentoring within the domain of environmental education, the arena of leadership, and the sector of professional development. It showed that the mentoring process is well documented in industry, nursing, teaching and education (Roche, 1979; Benner, 1984; Gehrke, 1988; Heywood, 1992; Limerick, 1992; Caldwell and Carter, 1993), but highlights that little is known of the relationship of mentoring as it applies to the field of environmental education (Tanner, 1980; Beeler, 1988; Biel, 1988; Palmer, 1993; Snow, 1992a, b).

Because this research about mentoring delves into the personal understanding of the participants, certain methodological decisions were made to ensure congruity between research methods and techniques and the substantive focus of the question (Tesch, 1989). Firstly, a qualitative paradigm was chosen. Secondly, the methods of survey questionnaire and semi-structured interviews were selected for data collection, and thirdly, the methodology of grounded theory (Strauss and Corbin, 1990) was adopted for data analysis.

Chapter Three presents the rationale for the methodology chosen to examine the major research questions, explains the general stages of investigation which were undertaken, and delineates the specific procedures used to analyse the data.

3.1 Qualitative Research - A paradigm for understanding

A paradigm is defined as 'an example or model' by the Australian Oxford Dictionary (1988: 329). Guba and Lincoln (in Denzin and Lincoln, 1994: 105) elaborated on that definition describing it as "the basic belief system or worldview that guides the investigator, not only in choices of methods but in ontologically and epistemologically fundamental ways". Kuhn (1962), speaking of revolutions in scientific thinking, saw a paradigm as setting a standard for legitimate work until such time that a rival paradigm emerged with different questions and incompatible procedures. To progress, one must be willing to break out of old models and shift to new ones better suited to one's purposes.

Lidstone (1993:1) conceptualised the current research paradigm in education as "a continuum with extreme positivism at one end and extreme conceptual reflection at the other". This model for understanding comes from a social research perspective and utilises an interpretative tradition which claims to overcome the "difficulties which have been encountered in attempting to apply a classical scientific paradigm of research to problems in which human behaviour, action or attention play a large part" (Stenhouse, 1982b: 261).

A qualitative paradigm is a philosophical framework (van Manen, 1990) which is underpinned by a concern to understand the meaning and action of the participants (Carr and Kemmis, 1986). "Very often, in qualitative research, there are no specific 'hypotheses' to be tested. Thus, a broad question is acceptable at the proposal stage, with refinements or reformulation and identification of relevant questions for the particular situation undertaken as the study progresses" (Holt, 1993: 3).

Rather than beginning with specific hypotheses to be tested or developing broad generalisations, patterns of similarities and differences may be uncovered among those studied. Validity comes from careful argumentation (Tschudi, 1989) and creating understanding rather than proof (Lidstone, 1993). Johnston (1989: 75) concurred with this view stating that, "a qualitative paradigm ensures flexibility in data collection, with an emphasis on data which are rich and concerned with the subjective meaning assigned by individuals to events in which they have been involved". Burns (1991: 10) suggested that with this model of research, interest "is directed toward context-bound conclusions that could potentially point the way to new policies and educational decisions, rather than towards 'scientific' generalisations that may be of little use at the coal face".

3.1.1 Qualitative research and environmental education

Environmental educators often find themselves 'at the coal face' when explaining controversial issues to students, organisations and communities. Understanding the personal values, attitudes, beliefs and actions of these leaders requires a different approach to educational research, one which has evolved beyond comparative and experimental research designs (Butler 1992c). However, given the scientific basis of environmental science compared with the social theory basis of environmental education, it is reasonable to understand why quantitative research has become the predominant methodology. One criticism of exclusively quantitative designs is that, although they can give broad descriptions of environmental knowledge and behaviour, they may miss some of the subtleties, complexity and richness that underlie people's attitudes and behaviours (Hillcoat *et al.*, 1995).

It is time that environmental education research shifts to a qualitative paradigm according to Robottom (1992b: 139) who criticised previous research in the United States as being 'insular' - lacking connections to the developments in the broader field of educational research, 'behaviourist' - relying on a predominantly applied-science approach to research, and 'exclusive' - not posing questions about the goals of the research. Instead, he propounded a need to emphasise research issues in environmental education which were educational rather than environmental in character. Corcoran (1992: 75) agreed stating:

> We, in North America, are only beginning to move away from traditional social science paradigms to accept that more naturalistic methodologies can have rigour and interpretive value. The kind of questions asked in Australian non-behaviourist and critical action research are only beginning to be raised in North American environmental education research. We stand to be greatly informed by developments in education research whereby concepts are contested, assumptions are critiqued, and goals are not regarded as 'givens'. ...

> Environmental education is so diverse, so non-mandated, so decentralised, so characterised by grassroots participation, that it is not easy to discover what is being done - or what works.

The qualitative research paradigm has begun to be applied to the field of environmental education (Fien, 1992; Hillcoat *et al.* 1995). Two approaches to this type of research have been: interpretative where the researcher is usually an outsider (Cantrell, 1990) and critical where the researcher is a self-reflective practitioner (Hart, 1990). Both show a prime interest in understanding "the 'interpretive categories of practitioners' such as their aspirations, presuppositions, assumptions and values held tacitly or consciously, and in terms of which their educational actions can be made intelligible" (Robottom, 1992a: 140). Because environmental education was the domain for this study and understanding the 'interpretive categories' of the leader/practitioners was important, it was, therefore, considered appropriate to adopt a qualitative paradigm to probe the research questions about mentoring of leaders.

3.1.2 Qualitative research for this study

A qualitative approach can lead to understanding the mentoring experiences of individual leaders in environmental education, but it is also appropriate for studying the dynamics of mentoring relationships within the selected group (Phelps, 1994). This study examines the effectiveness of the mentoring experiences as a 'self-consciously educational process' in the personal and professional development of leaders. One measure of research success can be judged from the insights gained by environmental education leaders about the self-understanding of their mentoring relationship (Robottom, 1992a); another measure is the implications those mentoring experiences might have for the professional development of other environmental educators. The qualitative research paradigm for this study was implemented through a multi-method approach of using surveys and interviews.

3.2 Research Methods - Data collection tools for a qualitative study

3.2.1 Surveys - gathering information

A survey is a research tool which is characterised by a systematic collection of data about the same variables from different cases (de Vaus, 1991; Youngman, 1978a). Philosophically-based criticisms of surveys suggest that they are unable to get at meaningful aspects of action and beliefs and may be equated with rigid scientific hypothesis testing. Yet, by including open comment sections, surveys allow for a complementary collection of both quantitative and qualitative data (Hillcoat *et al.*, 1995). The free response items are valuable adjuncts to the statistical data because they provide information which reveals a frame of reference and explains the reasons for the coded data which in turn can point to recognisable trends (Pribyl, 1994).

3.2.1.1 Surveys in leadership and mentoring research

A number of previous studies of mentoring have been conducted using surveys as the primary data collection instrument. Roche (1979) solicited a common understanding about the meaning of 'mentor' by sending a questionnaire to senior executives whose appointments were announced in the "Who's News" column of the *Wall Street Journal*. He asked them, "At any stage of your career, have you had a relationship with a person who took a personal interest in your career and who guided or sponsored you?" Shapiro *et al.* (1978) pointed out the need for further investigation into how mentors chose their protégés and how protégés found their mentors. Spezier (1981) also argued that the idea that a mentor is essential for career success had not been validated. The use of a survey can help address these questions.

More recent surveys have been conducted to probe other professional aspects of mentoring, for example, supportive relationships during the career, what was learned from their mentoring experience, and what had been achieved as a result (Byrne, 1989; Arnold & Davidson, 1990; Segerman-Peck, 1991; Limerick, 1992). However, surveys about mentoring directly related to the field of environmental education have not been found in the literature.

3.2.1.2 The survey - advantages for this study in environmental education

Surveys have been used in environmental education research and some have purposely been focused on leaders. Langton (1984: 21) surveyed "well-known executives of environmental organisations with outstanding reputations among their peers". Tanner (1980), Peterson and Hungerford (1981) and Palmer (1993) canvassed professional environmental educators and leaders to ascertain the developmental variables affecting environmental awareness and action. Only a few people in environmental education have mentioned the efficacy of mentoring in their personal lives or have suggested it as a way for improving professional development of future leaders (Udall, 1986; Beeler, 1988; Biel, 1988; Gumaer Ranney, 1992; Lorenz, 1992; Tilt, 1993). Yet, to the researcher's knowledge, no systematic survey had been conducted with identified leaders in which the questions about mentoring were specifically addressed.

When designing qualitative research which might include survey methods, Phelps (1994: 192) proposed that the place of theory "needs to be clear in the mind of the researcher, and it should be spelled out in the reporting of the research. In this way, the researcher makes everyone aware of theoretical assumptions and the perspectives being used to view the research". Based on the review of literature on mentoring, certain theoretical assumptions underpinned the use of survey methods for this study. Firstly, the results would show likenesses in mentoring relationships among the field of environmental education and other professions. (refer to list on page 104-5). Secondly, the surveys would act as a gateway to conducting extensive qualitative interviews.

In order to discover attributes which might be different for mentoring relationships in environmental education, this survey sought to discover if mentoring began informally or formally; did it only happen to protégés at the beginning of their careers; was mentoring a key consideration for the mentoree when assuming leadership roles; how long do these relationship last; is there a personal as well as a professional dimension of the relationship; and what makes mentoring effective.

When designing a survey, Youngman (in Bell *et al.*, 1987: 157) cautioned that one must be familiar with the literature from one's area in order to give valid reasons for the items included.

> This implies two possibilities; either the literature study will have revealed specific questions, or more generally it will have suggested important areas needing more detailed investigation. Either way, there should be some theoretical justification for including a particular question, beyond superficial appeal.

The items developed for the survey questionnaire for this research stemmed from environmental education literature such as the work by Tanner (1980), Peterson and Hungerford (1981) and Palmer (1993) who spoke of significant life experiences for those interested and active in environmental education. This study replicated some of their questions about autobiography, established what made one become active in an environmental education career and probed the professional development of the leaders (Magill, 1992). This study, however, went on to specifically ask about mentoring in general, details of the leaders' mentoring experiences, and if there were differences in mentoring experiences for environmental education. The questions about the characteristics of mentoring relationships came from the study of Roche (1979) and Segerman-Peck (1991). Items on the duration of the relationship and change over time were suggested by the research of Levinson (1978) and Kram (1983), while the leadership section included suggestions from Smyth (1989) and the professional development section was modelled on Limerick (1992).

Wolcott (1990: 27) argued that "description is the foundation upon which qualitative research is built". In his book, *Surveys in Social Research,* de Vaus (1991: 11) espoused the view that social researchers provide answers for two fundamental questions: "*what* is going on (descriptive research) and *why* it is going on (explanatory research) ... [because] the role of sociology is to theorise: it is not just social arithmetic". In using survey methods, he distinguished 'theory testing' from 'theory construction'. The latter is a process which begins with a set of descriptions which can come from surveys and moves on to develop theories. According to de Vauss (p.12), "it is also called grounded theory because it is based on observation - not simply armchair speculation". Descriptive information from the surveys aided theory construction for this study and will be examined in Chapter Six.

3.2.2 Interviews - clarifying the meaning

Due to the exploratory nature of the research problem in this study, a combination of methodologies provided a flexible data collection mechanism. The descriptive data from the questionnaire survey supplied a useful framework for conducting oral interviews with selected leaders. It permitted unpredicted aspects of the mentoring phenomenon to arise (Bell *et al.*, 1984; Tesch, 1989).

The interview method allowed the researcher to enter into the other person's perspective so as to understand phenomena which have occurred in their past. Patton (1980: 196) described this process as follows.

> We cannot observe feelings, thoughts, and intentions. We cannot observe behaviours that took place at some previous point in time. We cannot observe how people have organised the world and the meanings they attach to what goes on in the world - we have to ask people questions about those things.

The subsequent reporting of these interviews as 'cases' (Section 3.6.2.5) follows in the tradition of 'narrative studies' employed by qualitative researchers such as Connelly and Clandinin (1990).

3.2.2.1 Autobiographies

Butt (1993) described a method of collaborative autobiography using life stories as a way of enabling the researcher to understand professional knowledge and development for both the experienced and neophyte practitioners. His approach has been used with teachers, administrators, nurses, business persons and academics. He conceptualised a flexible elongated diamond which draws the opposite points of theory and practice closer together, thereby stretching the apexes of ideal and reality. To understand where participants feel that they fit on this increased ideal/reality continuum, they tell 'stories' of their insider reality and outsider dream as shown in *Figure 3.1.* This method is a collaboration with the listener to make the story real according the participant's truth and not the construction and fashioning of the researcher's terms.

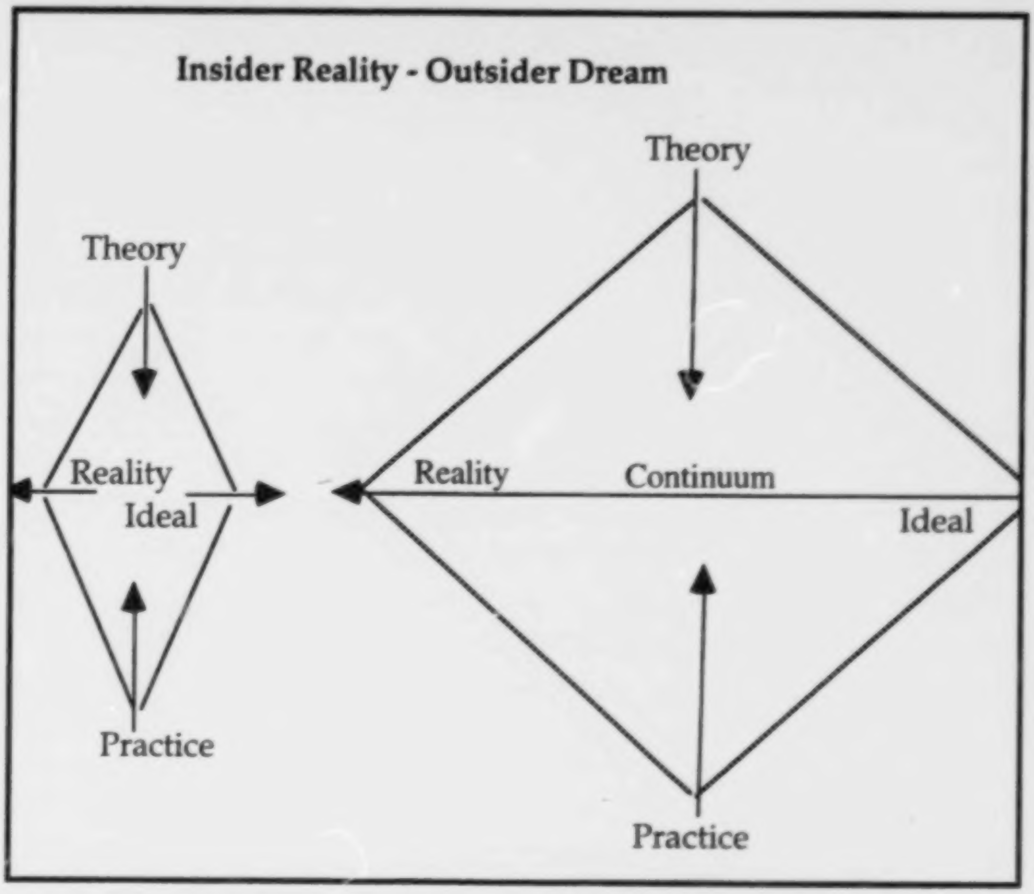

Figure 3.1 Butt's model of 'Insider Reality - Outsider Dream' (1993).

The autobiographical approach used for this study of environmental educators takes a similar tack to that of Wilson (1995) referred to in Chapter Two, p. 35). Building on the work of Paschal (1960) and Krall (1988), she described a five step process to elicit 'ecological biographies' including: venturing, remembering, comprehending, embodying and restoring. This research goes one step further by adding the notion of 'cascading', that is, passing mentoring on to new mentorees.

3.2.2.2 Semi-structured interviews

The use of autobiography fits well with a semi-structured interview. This method allowed respondents time to express themselves at length, but offered enough shape to prevent aimless rambling (Wragg 1987). He accounted for the reliability of semi-structured interviews by asking if an interviewer would obtain a similar picture using the same procedures on different occasions. Seidman (1991) suggested three, hour-long interviews conducted over time: the first centring on autobiography, the second on the concept being considered, and the third a reflection on the interviews.

One limitation of the recall technique imposed by interviewing is that the participants' responses lack "the advantage of immediacy and reflect thoughts and feelings that may dissipate with time" (Ballantyne, 1992: 359). Wragg (1987: 181) agreed that "people's attitudes and behaviour often do transform over a period of time, a phenomenon which some researchers call 'function fluctuation'.

3.2.2.3 Interviews in leadership and mentoring research

As demonstrated in the literature review, interviewing is not a new technique in mentoring research. Bennis and Nanus (1985:23) selected their leadership sample using ninety interviews conducted with successful white, male CEOs, all corporate presidents or chairmen of the board, and thirty outstanding leaders from the public sector.

> The study pursued leaders who have achieved fortunate mastery over present confusion - in contrast to those who simply react, throw up their hands, and live in a perpetual state of 'present shock". Furthermore, the study concentrated on leaders directing new trends ... These were people creating new ideas, new policies, new methodologies ... The 'interviews' became more like the exploratory dialogues and the so-called 'subjects' became our co-investigators. The dialogues were 'unstructured'.

Hennig and Jardim (1977) conducted in-depth interviews of twenty-five top-level executives and found that all had had a male mentor. The authors cited Phillips (1977) who used both a survey and interviews for over three hundred women managers revealing that 'primary mentors' went out of their way to help the protégés both personally and professionally. Levinson *et al.* (1978) interviewed forty men from a business setting and concluded that most successful men reported having mentors as young adults. Lunding, Clements and Perkins (1978) also concluded from their interviews that "everyone who makes it has a mentor".

Kram (1983: 610) described her methodology for studying mentors based on Reinharz (1979) arguing that "methodological decisions were guided by the premise that an appropriate research strategy emerges from careful consideration of the interaction of the problem, the method, and the person-researcher". Even though her primary data contained individuals' subjective experience of the relationship, Kram felt in-depth interviewing of a small number of individuals about their career history was essential for understanding the relationship's characteristics, as well as having the advantage of mutual learning for both investigator and participant.

Kram (1983) had pointed out that retrospective accounts about mentoring relationships early in a career may present the possibility of distortion of the data because of faulty recall. Another caution about interview techniques is that derivation of the data should not be from only one perspective of the relationship, but rather from personal accounts of both parties in the relationship. Kram (1983: 610) explained her conceptual model based on paired interviews as follows.

> The conceptual model ... classifies the phases of a mentor relationship by systematically delineating the psychological and organisational factors that cause movement from one phase to the next. In addition, conceptualisation, derived from an intensive biographical interview study of *pairs* of managers, makes the experiences of both individuals explicit, highlighting how both can be beneficiaries of the relationship. This dynamic perspective illuminates the manner in which the mentor relationship unfolds over time as well as how each individual influences and is influenced by the relationship at each successive phase.

Merriman (1983: 170-71) questioned whether investigators who use interview methods rather than surveys, find a higher incidence of mentoring. She wondered, "how much prompting was needed in order for subjects to recall a mentoring relationship, and when such a relationship could not be readily articulated, how [was] the phenomenon ... being defined". She stressed that mentoring relationships have to be "investigated in the totality of a person's life - both the mentor's and the protégé's. The research focus could thus be upon the dynamics of the relationship ... To continue surveying the extent of mentoring without clarification as to what is being surveyed seems futile". In the end, she advocated a combination of both methods to understand fully the effectiveness of mentoring.

These research methods have continued to be used in more recent mentoring studies such as Segerman-Peck (1991) and Limerick (1992) who followed up their surveys with interviews and correspondence.

3.2.3 Pursuing an opportunity for this study

3.2.3.1 Researcher's stance

When carrying out qualitative research, Phelps (1994: 192) stressed the importance of knowing the researcher's background and experience, stating: "Since the researcher is an important data collection instrument in qualitative research, it is important that readers know what type of filter is being used to collect the data". For this study this researcher has considered her personal mentoring relationship as it relates to environmental education. Therefore, her stance during the interviews was that of a 'participant - observer' where the researched are seen as reliable informants (Butler, 1992a: 7). This approach followed the precepts of interpretative methodology suggested by Cantrell (1990). Because of this stance, the researcher firstly planned to carry out paired interviews to permit triangulation of the data from the leader/mentoree and his/her mentor. However, an additional opportunity became available, that of interviewing two previous levels of mentors and hearing stories about a third. This is referred to as 'linked interviews'.

3.2.3.2 Paired Interviews

The first wave of interviews focused on developing and testing the significance of issues and themes which had emerged from the questionnaire. It was important that the leaders who sketched their relationship with their mentors through the written survey were allowed during the interviews to flesh out details that they felt were important to the mentoring relationships.

A modified version of Seidman's (1991) trilogy of semi-structured interviews was employed in order to understand the leader's contextual influences. Although there is some research intrusion in an interview situation by the interviewer, this format allowed for a more natural conversation to develop between the researcher and participant giving them an opportunity to develop their responses and allowing for answers which could be "considered, rephrased, reordered, discussed and analysed" (Burgess, 1984). The interviewee was able to delve beneath the obvious answers and clarify the personal meaning that the mentoring relationship had in terms of his/her personal life and career. Maxwell (1992: 285) counselled that "philosophical sophistication is of value only when it engages with our ordinary ways of seeing and thinking". This study aimed at understanding the 'ordinary experiences' of these mentoring relationships - the initiation and development, the personal and professional effectiveness, and how it might link to environmental education leadership.

As cited in the literature review, autobiographical techniques have previously been used in environmental education research to understand the life and career of environmental educationalists (Tanner, 1980; Peterson and Hungerford, 1981; Palmer, 1993, Wilson, 1995). This technique was replicated in this research. However, questions used during the interviews were mainly adapted from Butt (1993) and allowed participants an opportunity to build their life stories starting from their initial interest in environmental education, its development over time and how their mentoring experience fits in with their current leadership position and roles. The selected leaders were able to sequence and delineate the various stages of their mentoring relationship and were able to reflect on their philosophy and actions in light of their mentoring experience.

Butt suggested five basic questions which make up a facilitative framework for the autobiographical story. In the context of this study, the questions were:

1. What is the nature of your work in environmental education?

   This question allows the participant to map the underlying tensions, both positive and negative, of their interest and career progress in the field of environmental education. It allowed them to explain when and how the mentor began to influence their personal development and their professional career.

2. Within that context, how do you act?

   Special relationships can be defined including mentoring, leadership roles, professional development and career choices.

3. How did you get to be that way?

   The revelation of watershed moments is essential to understand the impetus for the development of and the continuation or demise of the mentoring relationship.

4. How do you want to be in the future?

   This query allows for the possibility of future mentoring and its role in the development of future leaders in environmental education

5. If your mentor were here now, what would you say to him/her?

   This question allowed the participant to 'change voices' from describing the mentoring experience from an 'outsider' perspective to reflecting on their 'insider's reality'.

The need to reconstruct life stories may seem to lengthen the interview and, at times, seem to diverge from the point of interest. However, it encouraged a critical reflectiveness about the participants' lives embedding the significance of the mentoring experience within the continuum of their environmental education career.

One question explored during the interviews was: Did the mentoring relationship become an educative experience for environmental education leadership? Smyth (1987: 20), looking at teacher leadership, suggested considering the following questions when examining a leader's experiences.

1. Where did the ideas I embody in my teaching come from historically?
2. How did I come to appropriate them?
3. Why do I continue to endorse them now in my work?

4. Whose interest do they serve?
5. What power relationships are involved?
6. How do these ideas influence my relationship with my students?
7. In the light of what I have discovered, how might I work differently?

Smyth's ideas were taken into consideration when probing the background of the mentorees. Many of these same questions must be asked in the light of their leadership role which usually involves transmitting ideas of environmental education to a variety of audiences. Also, it was of importance to understand when and how a mentor's influence might have affected these roles.

As with Kram (1983), the paired interviewing of the leaders and their mentors in this study provided information on how the relationship benefited the mentor and well as the mentoree. Furthermore, the 'personal participant knowledge' of the mentoree was often corroborated during an interview with the mentor. The leader/mentoree interview refined the scope and sequence of questions for the mentor interviews in order to further explore the mentor's ideas about:

1. factors explaining formations of mentoring relationships;
2. reasons for the selection of mentoree;
3. philosophy of the mentoree and themselves;
4. roles of demographics, attitude and gender in the mentoring process;
5. benefits and limitations for the mentorees and the mentors; and
6. possibilities of extending a cascading mentoring programs for environmental educators.

3.2.3.3 Linked Interviews

Tesch (1989) pointed out that a researcher must have the freedom to follow promising leads in the course of gathering data even if this means making a change to the conceptual range of the study. That process was particularly true in this study as there was no way to foresee that mentors would recount experiences of their previous mentors and that interviews would then be possible with these other mentors. This necessitated a second level of interviewing and provided an opportunity to explore the intentions underlying the mentoring experiences of the previous mentors and search for patterns which could lead to a conceptual framework of 'mentoring cascades'.

Stevenson (1985) commented on Le Compte and Goetz's (1983) ideas of interviews that data collection and analysis are interwoven because questions may not be clear until the "initial analysis of impressions, perceptions and tentative conclusions has been done". Phelps (1994: 191) defended this approach saying:

> Designing a qualitative study completely before entering the research site is problematic because much of the design is emergent and holistic. Change is expected and anticipated in qualitative research and this state of constant change helps to define the emergent design. Intentions with respect to design can be expressed, but enough flexibility must be allowed so the researcher can attend to the needs of the setting.

The strength of this study lies in the unfolding questions about a 'cascade of mentoring influence' which could be addressed by a 'linked interview' method. This technique begins with the paired interview between the original mentoree and the mentor. The interviews then link back to the mentor's mentors or link forward to an interview with the original leader's new mentoree. A limitation of the 'linked interview' method was that the sample size decreased through each level of interviewing due to inaccessibility, retirement or death of mentors and the fact that only some leaders had new mentorees. However, this research technique, requiring a commitment of time and persistence, gave a richness and depth to the interview data especially when persons interviewed spoke both as mentorees and mentors. Daloz (1986: 113) summarised the researcher's approach to interviewing as follows.

> In the end, it is simply *better* to see human beings as wholes rather than isolated minds, bodies or souls. It is phenomenologically better because it recognises that the world is intrinsically connected and respects those

> connections *before* sundering them for purposes of analysis, not after. It is intellectually better because it allows a more complex and dynamic understanding of living phenomena in flux, a grounded and contextual grasp rather than the abstract and conveniently frozen vision of a cadaver on a table. And it is ethically better because it represents a stance at least approaching a loving, caring respect for the inherent worth of the other person.

The complexity of detail from the 'linked interviews' prompted the researcher to organise the reporting of the mentoring experiences into four cases which were based on the research technique of case study (Kemmis, 1980) and will be explained in section 3.4. Overall, the combination of survey and interview methods of data collection provided a holistic view of the participants. The analysis of this data was approached from a grounded theory methodology

3.3 Grounded Theory - A methodology for qualitative data analysis

3.3.1 A Constant comparative method

The word 'theory' has been defined as "a coherent group of general propositions used as principles of explanation for a class of phenomena" (Macquarie, 1987: 420). Butler (1992b: 1) proposed that "a central purpose of research is theory building about personal practical knowledge of those in the world of action where there are competing options and where the consequences of actions are never certain". Therefore, a constant comparative analysis, as used in grounded theory methodology (Strauss and Corbin, 1990), was appropriate for building theory about the leaders' 'personal practical knowledge' concerning mentoring within the domain of environmental education. Survey questionnaires and semi-structured 'linked interviews' are well suited to the task of collecting qualitative data, while a grounded theory approach is appropriate for its analysis.

Grounded theory is defined by Strauss and Corbin (1990: 24) as "a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon".

Conditions are specified which give rise to the set of action/interactions pertaining to that phenomenon which, in this research, is the mentoring experienced by leaders in environmental education. Four central criteria are addressed in the interpretation of the theory generated from a grounded theory analysis: fit, understanding, generality, and control.

'Fit' is demonstrated by being faithful to the everyday reality of the selected leaders by analysis carefully induced from the diverse open comments of the respondents to the questionnaire and the interview transcripts of mentors and mentorees. Because this interpretation represents the reality of those leaders and mentors, it should be 'understandable' to both parties as well as to others interested in this area of research. The data explained should be comprehensive and the interpretations conceptual and broad, giving rise to theory which is abstract enough and sufficiently varied to make it applicable to a variety of contexts. Concepts are systematically derived by distilling data from the surveys and the interview transcripts. The researcher hypothesises about relationships among these concepts and constructs a theory which is generalisable to these specific situations.

3.3.2 Data analysis.

In a collection of papers entitled, *The creative dissertation: Oxymoron or ontology* (In Garman *et al.*, 1986: 1), Piantanida described her approach to data analysis using grounded theory through a 'pebble mosaic' analogy. At first, each concept was like a brightly coloured pebble which she duly organised into carefully labelled boxes. She felt at one point that, "despite the volumes of pebble I had gathered, everything I wrote about the piles seemed terribly superficial and banal. Unconsciously I had become trapped in a dysfunctional stereotype of research in which I thought I had to account for all the piece of data I had collected". She then read a definition of theory by George Ball (p. 3) which stated that:

> ... a theory is not a collection of information regardless of how carefully catalogued it may be. Nor is it an account of a sequence of events, no matter how well authenticated. In essence a theory is simply a way of highlighting events so they may be viewed in some kind of perspective.

Finally she began to see broad outlines of her research and wrote, "Then began the painstaking work of sorting through the piles of data/pebbles to fill in the details of the mosaic". From this analogy she summarised (p. 61) her approach to grounded theory:

> ...I would like to summarise my perception of conceptual research. Human experience is the 'raw material' with which the researcher begins to work. Because human experience is dynamic and ephemeral, a stable data record is needed. The interview transcripts I used is one example of a stable data record. Through analysis of and reflection on the records, the researcher begins to identify meaningful aspects of the experience. Concepts, as they are developed and juxtaposed, create a language for sharing the essential meaning of the experiences.

The pebble mosaic analogy of Piantanida guided my methodological approach to data analysis. Powney and Watts (1987) further defined the analysis of research results as a detailed examination of the database which goes beyond simple description. Analysis guided by a grounded theory approach is directed toward theory-generating rather than theory testing (Guba, 1978) in that there is a constant comparative method to develop categories, properties and dimensions which give rise to tentative 'hypotheses' stemming from the data. The procedure is seen as a "...cognitive process of discovering or manipulating abstract categories and the relationship among those categories" (Goetz and Le Compte, 1984: 167). The tentative categories were determined by support from the data. If evidence was cross-referenced among various responses, it was retained. This method, according to Glaser and Strauss (1986: 28), requires a balance.

> Verifying as much as possible, with as accurate evidence as feasible, is requisite while one discovers and generates his (sic) theory - but not to the point where verification becomes so paramount as to curb generation.

Goodwin (In Garman *et al.*, 1986: 4) described this process as 'research vitality'. "My hunches and the research questions got us started, but meant nothing if they went unsupported in the data. I called this phenomenon in which the data assumes control and the study comes alive, research vitality ... born from induction and constant comparative analysis [it] is characteristic of grounded theory and conceptual research". Strauss and Corbin (1994: 277) refined their views on grounded theory noting:

> Glaser and Strauss overplayed the inductive process ... Researchers carry into their research the sensitising possibilities of their training, reading, and research experience, as well as explicit theories that might be useful if played against systematically gathered data, in conjunction with theories emerging from analysis of data.

Reproducibility in qualitative research is a limitation which can be overcome by using the same theoretical perspective, general rules for data gathering and analysis in similar sets of conditions. "Whatever discrepancies that arise can be worked out through re-examination of the data and identification of the different conditions that may be operating in each case" (Strauss and Corbin, 1990: 251). In the end, the system of coding continues until the core category is derived and theory construction is feasible. Burroughs-Lange & Lange (1994: 5) described Strauss and Corbin's (1990) analytic procedures as "the process in grounded theory whereby related codes become higher order conceptual mapping of the phenomena through axial coding, selective coding, core category recognition and ultimately theory construction". This is shown in *Figure 3.2.*

Open coding is defined as the process of breaking down, examining, comparing, conceptualising and categorising data. *Axial coding* is a set of procedures whereby data are put back together in new ways by making connections between categories looking for conditions, context, action and consequences. *Selective coding* is the process of determining the core category, systematically relating it to other categories, and validating those relationships (Strauss and Corbin, 1990: 61, 96, 116). Strauss and Corbin (1990: 253) suggested seven criteria to evaluate a grounded theory analysis of data.

1. Why/how the original sample was selected?
2. What major categories emerged?

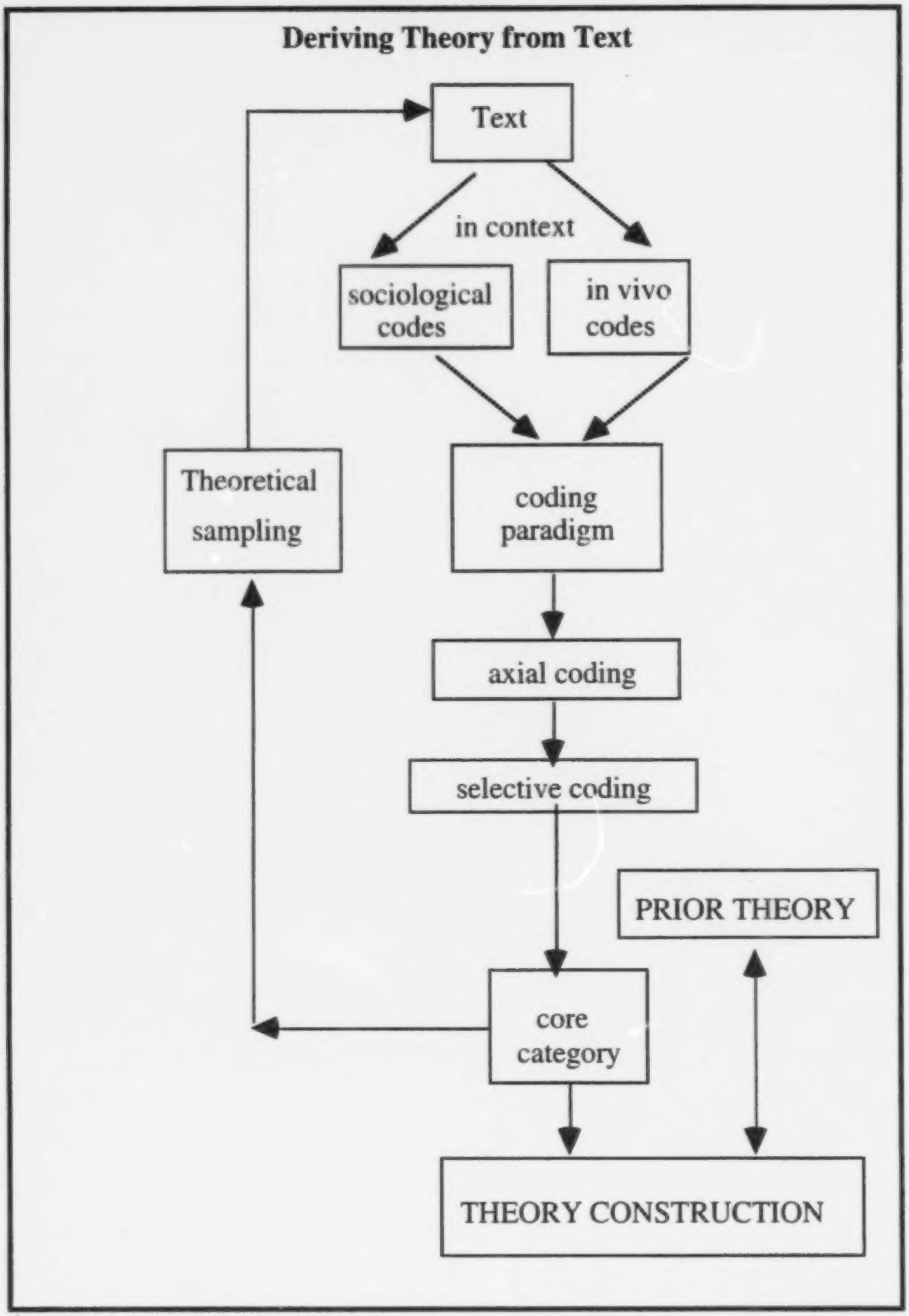
Deriving Theory from Text
Text
in context
sociological codes
in vivo codes
Theoretical sampling
coding paradigm
axial coding
selective coding
PRIOR THEORY
core category
THEORY CONSTRUCTION

Figure 3.2. Grounded theory analytic processes from Strauss and Corbin, 1990 in Burroughs-Lange & Lange, 1994.

3. What events, incidents, actions and indicators pointed to the major categories?
4. How representative were these categories across the sample, were they backed up with theoretical sampling?
5. What were some of the hypotheses pertaining to conceptual relationships among categories, on what grounds were they formulated and tested
6. What discrepancies - how was data re-examined, how did they affect the hypotheses?
7. How was the core category selected; was it sudden or gradual, and how were final analytic decisions made?

Criterion one is explained in the research design section of this chapter while criteria two to seven are introduced and used as guidelines for the discussion in Chapters Four, Five and Six.

3.3.3 Grounded theory used in mentoring research

A search of Dissertation Abstracts from the 1980s revealed several studies using grounded theory for mentoring research. Like this study, survey and interview methods were employed to collect data. The researchers used a constant comparative analysis between the literature and the substantive data of the study, allowing tentative theoretical categories to develop. The emergence of a core concept led to the construction of a theory about their particular study sample. In addition, Mellor (1995) analysed her data using NUD.IST, a computer program for qualitative text analysis, which is also utilised in this research. A sample of topics involved and their major findings are shown in *Table 3.1.*

Research about mentoring of environmental eductors was absent, difficult to locate and generally not research oriented. Of the little research found on this topic, none used a grounded theory approach nor did they use NUD.IST. In addition, the technique of 'linked interviews' employed in this research is a unique method to build theory about any 'cascade effect of mentoring' within this particular group of environmental education mentors and mentorees.

Table 3.1 A sample of research studies about mentoring which use grounded theory.

*Author	Schmoll, B. (1982)
Topic	A description of mentor/mentee relationships among persons engaged in or preparing for professional roles
Findings	Fourteen pairs were interviewed and three conclusions were drawn: 1) distinguishing characteristics of mentors, mentees, the pairs and their relationships, 2) the relationship contributed to the personal and professional growth of both, 3) and mentoring was distinguishable from other types of relationships.

*Author	Gordon, C. (1983)
Topic	The conceptual framework of the mentor-mentee relationship
Findings	Twenty-four mentees were interviewed, but not their mentors. The results indicated that male and female responses generated from the academic community were highly similar in most dimensions of the relationship.

*Author	Dougan, A. (1986)
Topic	Mentoring in the social studies
Findings	Relationship between the thesis advisers and doctoral candidates were examined using a quantitative survey and qualitative data from fourteen interviews. Multiple roles emerged including: academic mentor, career mentor, intellectual/philosophical mentor and non mentor. The strongest personal bonds seem to occur when there was a commonality in philosophy and research interests.

*Author	Bravmann, S. (1987)
Topic	Mentor/protégé relationships in the lives of the gifted and talented
Findings	Hypotheses emerged in four interrelated theoretical categories: relational conditions; relational characteristics, particularly transition and balance; individual characteristics, activities and perceptions; and relational effects.

*Author	Mellor, M. (1995)
Topic	Mentoring: A buoyancy vest in teaching's stormy waters, A case study of mentoring of beginning teachers in a Queensland high school setting.
Findings	An effective relationship is characterised by shared values and expectations , open communication, compatibility, flexibility and management with a locus of control which progresses from dependency to interdependency as the relationship evolves. Contextual factors such as the school environment, the teaching and learning environment and the presence or absence of significant events play a part in effective mentoring.

3.3.4 Grounded theory approach for this study

Grounded theory methodology was used in this study because it allowed the researcher to generate theory about the mentoring experiences of leaders in environmental education from data in the questionnaire and the interviews rather than having pre-determined theories to test (Glaser and Strauss, 1986; Strauss and Glaser, 1990). It proved to be a way of discovering regularities by identifying and categorising elements of the mentoring experiences of individual leaders and allowed for exploration of the connections between and among the mentoring relationships of the mentorees and their mentors.

Grounded theory methodology was applied to this study by conducting a simultaneous literature review through December, 1995. This provided some *a priori* categories (Glaser, 1978) which were used in the early analysis of the data. Strauss and Corbin (1990: 55) referred to this as 'theoretical sensitivity' and stated:

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> Of course, any categories, hypotheses, and so forth, generated by the literature have to be checked out against real (primary) data. The interplay of reading the literature and doing an analysis of it, then moving out into the field to verify it against reality can yield an integrated picture and enhance the conceptual richness of the theory.

In this study, the substantive data (Glaser and Strauss, 1986; Strauss and Corbin, 1990) was derived from open responses on the survey and text transcribed from the recorded interviews. Many concepts were arrived at independently from the literature. When this occurred, the literature was revisited as verification of the concepts or to see where data from this study extended an idea. Concurrent reading and constant comparative data analysis allowed tentative hypotheses to be formed which were progressively focused and checked against the actual data. Theoretical memos served as a way to track the unfolding construction of theory. A core category finally emerged as the central phenomenon around which the other categories were integrated.

In addressing the question of validity (Kvale, 1989), the responses of the participants who were interviewed were compared with the open-ended data from questionnaire respondents who stated they had had a mentor, but were not able to be interviewed. There are clear links in this data regarding issues such as initiation and development of interest in environmental education and the definition of mentoring. Reliability is seen as the similarity of constructs about mentoring, such as integrity, support and values, which were highlighted from the questionnaire responses and were supported by details from participants during the interviews.

This researcher employed a method of 'developing analysis' after Holt (1993: 4) who stated that "a key characteristic of qualitative research is the on-going nature of analysis of the data as they are collected". The predominant aim of this study was to identify significant categories about the nature of mentoring for these leaders, the properties of those categories and the links between them. The preliminary coding scheme developed prior to the analysis by reference to the simultaneous literature review was enhanced as the analysis proceeded and changed as categories were elaborated or collapsed (Holt, 1993).

Grounded theory methodology lent itself to early presentation of the data so that concepts could be critiqued along the way (refer to *Appendix L*). This approach formed the basis for informal discussions with colleagues, presentations at several professional seminars, 'conversations' via e-mail with others interested in mentoring or in environmental education, and the preparation of papers for conferences and journals. As Johnston (1989: 80) highlighted, "such procedures have not only encouraged the researcher to refine and integrate interpretation, but they have also exposed the hypotheses to the scrutiny of a wider educational arena".

3.3.5 Analysis using computer software

The time and effort involved in data analysis by comparing and extracting commonalties across the surveys and interviews have been alleviated by using recently designed software packages for qualitative research (Tesch, 1990; Lee and Fielding, 1991; Burroughs-Lange and Lange, 1994; Richards and Richards, 1994). Given the emergent nature of this form of research, Burroughs-Lange and Lange (1994: 2) counselled that it "is incumbent on the qualitative enquirers to maintain careful records of data collection and analysis strategies". Lee and Fielding (1991:3) argued that computers can aid analysis when a researcher is faced with a large and unsystematic body of material. Because ideas often occur to an analyst after the data collection, they can be inserted in appropriate places to be used flexibly. "New codes can be added at will or material coded in several different ways at once. At the same time, raw data remain close at hand and are ready for inspection. These records or 'memos' form an 'audit trail' of the analysis process which reduces the text so that it becomes "distilled to its essentials rather than simply diminished in volume". When a qualitative researcher works with written data, holding the entire content of interview transcripts, open-ended text and various small coded units is not easy for the human brain. In the past researchers have resorted to written cards, colour-coded notes and sticky tape to recall the details for analysis. Today's researchers have available computer programs incorporating word processing and data analysis.

In this study the researcher used Microsoft Word 5.0 when analysing the open comments from the questionnaire. This word processing program allowed the researcher to build a 'code and retrieve' format for category labels. Words and phrases used by the participants are defined as 'indigenous' or *'in vivo* codes' and emerged from the data, but at the same time 'exogenous categories', those found in the literature, were recognised (Burroughs-Lange, 1994). Examples of these 'exogenous' or *a priori* codes (Glaser, 1978) from the literature began to appear in the early analysis of the questionnaire data and fall into four categories. These are: firstly, philosophy, belief and action for environmental education, secondly, trust, support and friendship for mentoring, thirdly, vision and communication for leadership, and fourthly, influence and effectiveness for professional development.

The first attempt to report the data was to write up summaries according to each section of the survey explaining the dimensions of each property noted (Strauss and Corbin, 1990: 69). Although many 'juicy quotes' were extracted by this process, it alone did not provide 'thick descriptions' (Richards and Richards, 1991a) which could lead to theory generation. It became apparent that information from the questionnaire would need to be blended with the analysis of the interviews. This would ensure that the emerging core categories and the subsequent generation of theory could be grounded in all of the data in order to answer the major research questions. The emerging theory about a 'cascade effect of mentoring' needed to be drawn not only from the questionnaires, but from the interviews as well. Tesch (1991:23) explained this process of grounded theory construction.

> Researchers who seek 'connections' seek 'explanations'. They try to find out more than just *what* is; they also try to find out *why* it is. Seeking explanations is the same as 'theorising'. It begins with attempting to establish linkages between/among the elements to the data that the researcher has identified and classified.

Part way through the period of study, the researcher had the opportunity to learn the computer program NUD.IST 2.3 and the later version 3.0 which is, as its acronym describes, an aide for analysing Non-numerical Unstructured Data through Indexing, Searching and Theorising. A limitation to using a program such as NUD.IST is postulated by Burroughs-Lange and Lange (1993: 4).

> Qualitative researchers fear that employing computers may reinforce the mechanistic aspects at the expense of operating more theoretically in the research environment. The effectiveness of qualitative analysis does indeed depend upon the ability of the human brain to 'make sense' of what is going on in the world. But 'making sense' for the analyst using a software tool also includes understanding and controlling its structural influences rather that allowing the program's nature to override the natural setting.

As with any mechanical process be it notecards or keyboard, the result is only as good as the researcher's ability to interpret the data which Tesch (1990: 235) describes as a coherent analysis with a process "needing skilful perception and artful transformation". Beginning strategies for indexing includes a careful reading of the interview transcripts and "marking off coherent stretches of the field notes by the topical focus expressed in them" (Burroughs-Lange & Lange, 1994:6). Because initial coding is tentative and refined continually, a section of text may easily be coded for multiple categories. These codes, called indexes (sic) in NUD.IST, have the purpose of interlinking units of text for later analysis. Because the text units can be spread out when retrieving them for analysis, the key ideas can be kept in context. The data can be checked to see if the code is appropriate for some or all instances and to find associated causes or consequences. When looking across the data, the researcher might ask if the generalisation holds true for all the cases, and if not, why not. NUD.IST can be used as more than a mechanical aided "code and retrieve" program as shown in *Figure 3.3.*

NUD.IST supports a grounded theory approach to data interpretation by allowing related codes to be indexed, whole texts searched, nodes built, and comments added and edited. These operations can move the analytical process into higher order conceptual mapping through the collapsing of categories.

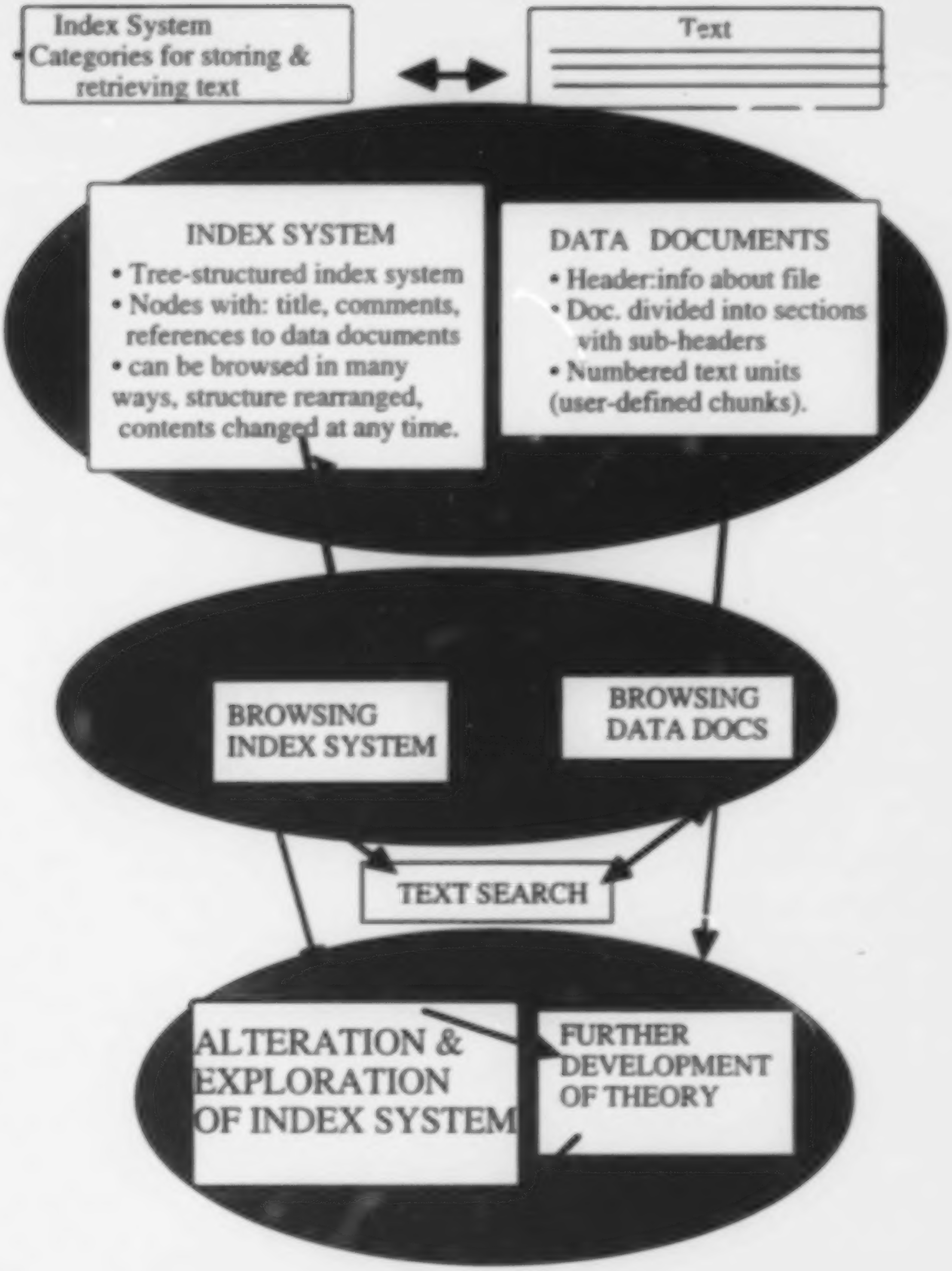
Index System
• Categories for storing & retrieving text
Text
INDEX SYSTEM
• Tree-structured index system
• Nodes with: title, comments, references to data documents
• can be browsed in many ways, structure rearranged, contents changed at any time.
DATA DOCUMENTS
• Header:info about file
• Doc. divided into sections with sub-headers
• Numbered text units (user-defined chunks).
BROWSING INDEX SYSTEM
BROWSING DATA DOCS
TEXT SEARCH
ALTERATION & EXPLORATION OF INDEX SYSTEM
FURTHER DEVELOPMENT OF THEORY

Figure 3.3 Flowchart for analysing text using NUD.IST (Burroughs-Lange and Lange, 1994).

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Hierarchical index trees can help the researcher to see the subsections of a set and quickly retrieve supporting textual 'evidence' for the evolving theory construction which can be recorded in memos and stored at nodes. As sample from NUD.IST for this project is shown in *Figure 3.4.*

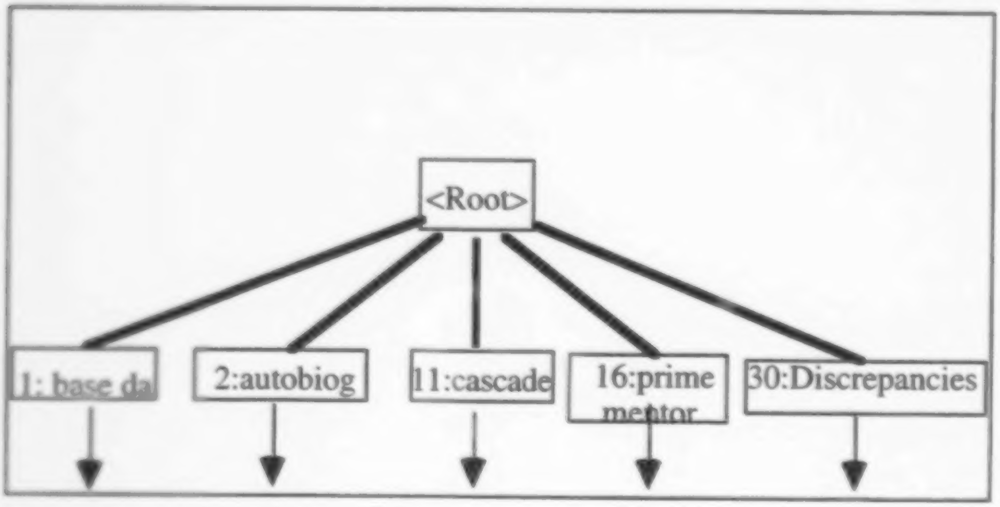

Figure 3.4 A sample of NUD.IST hierarchical index trees.

The use of the NUD.IST computer program enhanced the analytic process of this study so that data could be easily integrated and flexibly used while generating theory about the mentoring relationships of selected leaders in environmental education. The broad ideas about mentoring experiences from the survey data were refined (Holt, 1993) as detailed information was gained during the paired and linked interviews of leaders and mentors. Initial concepts were reformulated as the study progressed with further information from the linked interviews. The advantages of using this computer program for analysis may be summarised by a quote from the NUD.IST User Guide 3.0 (1993: 1-1 and 2-11).

> A NUD.IST project is the product of the researcher's knowledge and organisational and analytical skills. NUD.IST creates an environment to store and powerfully explore data and ideas, to minimise clerical routine and maximise flexibility, and to discover new ideas and ability to build on them ... These processes

> provide an integrated system for each project. They support the principle of qualitative research that enquiry is interactive, building on the results of previous enquiries and constructing new ideas out of old ones.

Richards and Richards (1991b:53) described the potential of the NUD.IST program saying, "the goals of grounded theory become accessible without the risk of jettisoning evidence for emerging themes, and with new abilities to interrogate them. That evidence can be examined in simultaneous analysis or subsequent reanalysis of data using different techniques". Those techniques include collapsing and expanding code, using Boolean logic, putting a quote back into context , and adding and transferring memos. These nodes can be easily visualised through 'trees' which can convey the logical properties of concept relationships (Richards and Richards, 1994).

Qualitative research methods, survey and interview data which will be analysed from a grounded theory approach using computer aided analysis, were chosen for this study. This integrated multi-faceted research process attempts to overcome some of the problems identified for environmental education research, that is, it has mostly been regarded as positivistic and quantitative (Corcoran, 1992; Robottom and Hart, 1993). Considering the wealth of information about mentoring from other areas and the paucity of mentoring research in the field of environmental education, this study has provided new qualitative research on this topic. The design for this research process is detailed in Section 3.5.

3.4 Identifying Cases - An approach to data reporting

Two roads diverged in a wood, and I - I took the one less travelled by, and that has made all the difference. *Robert Frost, "The Road Not Taken"*

3.4.1 Variations on conventional case study research

In conventional case study research, cases to be studied are identified by the researcher at the beginning of the research process. In this study, however, a number of discrete cases emerged as a result of the analysis of the interview data. Adelman, Jenkins & Kemmis, (1976) defined case study as an "attempt to unravel the complexities of human intentions and behaviours that surround an educational program, by focusing in depth on the unique experiences of individuals ... and their construction of reality. They seek to enrich our understanding by not only describing, but also explaining; by addressing not only the overt and the intended but also the covert and the unintended". Hitchcock and Hughes (1989: 214) added that this approach involved an in-depth study of a series of related events over a defined period of time. It allowed the researcher "to locate the 'story' of a certain aspect of social behaviour in a particular situation and the factors influencing this situation so that themes, topics, or key variables may be isolated or discussed". Beside the 'immediacy of use' which is one of the positive attributes of case study, Stevenson (1985: 44) cited other advantages when he wrote of educational situations in the following terms:

> There are two main advantages of the case study approach:
>
> 1. It provides the opportunity for evaluation questions to emerge during the process of collecting data rather than being precisely determined beforehand.
> 2. In-depth information can be obtained about such things as:
>   i) specific incidents and the processes that created them
>   ii) individual students perceptions of particular incidents and learning situations
>   iii) the operation of the program as a total entity.

One limitation of a case study approach includes "the need to tolerate some ambiguity at the beginning regarding the type of conclusions the evaluation will seek and leaving the reader to establish transferability of the case study to other contexts (Adelman, Jenkins & Kemmis, 1976). Although generalisations in the form of verified propositions cannot readily be drawn from case study data (Yin, 1984), readers are able to decide the generalisability to situations with which they are familiar" (Stevenson, 1985: 43). Nisbet and Watt (in Bell *et al.*, 1984: 76) remarked:

> Also, the case study provides suggestions for intelligent interpretation of other similar cases. A particularly important benefit is the possibility of a case study identifying a pattern of influences that is too infrequent to be discernible by the more traditional statistical methods.

In analysing the data, (Stevenson 1985: 45) advises that data should be cross-checked allowing the critical step of testing for validity and that "underlying patterns or recurring themes, both within and across data sources, should be sought, guided initially by the evaluation questions but remaining alert for the unexpected". To report case study results one needs the skills of synthesis, creative organisation and fluency with prose in order to distinguish descriptions by subjects from interpretation by the researcher. Nisbet and Watt (1984: 73) reason that case study should be more than an 'extended example' and must go beyond mere illustration by having the virtues of interest, relevance and a sense of reality. "It is essentially concerned with the *interaction* of factors and events". Since the case study approach may be used in a variety of ways to present information from a qualitative study, it fits well with questionnaire and interview methods for collecting data and with a grounded theory approach to analysis.

3.4.2 Case study in environmental education and mentoring research

Taylor and Wynn (1984, in Thomas, 1990: 5) suggested that case studies could be used to evaluate the operation of environmental management systems. The authors identified four reasons: case studies could focus on critical points for improvement, they could highlight the roles of individuals and their relationship to decision-making within an organisation, they are flexible and can foster interdisciplinary learning and working, and they establish a technique to monitor progress and assess performance.

Thomas (1990) described the process of using case studies to evaluate a tertiary Masters of Environmental Science program which provided the students with an opportunity to work in multidisciplinary teams and to develop an environmental ethic. He felt that the evaluation should seek exploration rather than a compilation of statistics and therefore a case study was a suitable approach. The report featured case study 'portrayal style' so that it would be of interest to a variety of stakeholders sensitising them to issues, concerns, feelings and tensions. He described the strength of a case study approach for environmental eduction research as a "representation of diverse points of view and different interests and the rich and persuasive information obtained". Engaging a range of environmental education stakeholders (Thomas, 1990) across the boundaries of education, academia, government, business and communities is an important outcome for this study.

In mentoring research some authors have also presented their findings as case studies. Sheehy (1981: 142-43, 317) wrote vignettes of her pathfinders describing the participants' inner-selves as well as their mentoring experiences. Two examples follow.

> Mary admitted to having no friends except for her boss-mentor. She lived a monastic, if not monstrously unbalanced, existence ... [she] later recognised that she had been using her work in part to deny her other needs. After her fall, and the anger, depression, and self-examination it forced, she began to yearn for balance in her life.
>
> One of the hopes Bingo holds out for his fifties and sixties is playing the role of mentor. That would offer him sublime continuity with his surrogate parents, who are both very old and, for him forbiddingly close to the end. "I like to think I am the beneficiary of two people who had the grief of the old days. The attitude they instilled in me about helping people and touching a lot of lives is one I should pass on. I'll be reaching out to groom people younger than me. Bingo Doyle is best forgotten. But there always has to be somebody that cares more than for their own narrow interests.

In his book, *Effective Teaching and Mentoring: realising the transformational power of adult learning experiences*, Daloz (1986:13) analyses the case studies of several mature age students returning to higher education. Daloz, serving as a mentor through an external program, artfully intertwined the stories of their experiences with his philosophy and insights about mentoring. Ellen, one of his first students, gave him the idea of using the metaphor of a journey as a useful framework for describing the mentoring relationship.

> It's like I'm back there and want to get over here, and the only way I can do it is to cross the river. So I say, 'OK' take a deep breath, and go. And I make it over here and that's where you are; you are alive. Sometimes I get mixed up about the journey across the river; sometimes I think it's the worst experience of my life; other time I think it's the most fantastic ... but you know, when you get over here, you leave something - you have to - and sometimes I wish I was the person back there, but I can't be and I don't want to be. I mean I can't ever be that person again. Once you cross that river the innocence is gone.

Analysing his case studies, Daloz came to four conclusions (p. xviii) about mentoring. He suggested that mentors should: 1) listen to the stories to see how the mentoree's quest fits into the larger movement of their lives; 2) view themselves as guides, challenging, supporting and 'casting light on the territory ahead'; 3) sense the whole life of the mentoree including their values and relationships, and understand the forces inhibiting and enhancing the mentoree from movement toward their aspirations; and 4) recognise the place mentorees have in one's life as a mentor. The examples set by Sheehy in reporting and analysing her case studies of mentoring experiences and the writing style of Daloz was influential in the decision to present the results of this study as four cases.

3.4.3 The derivation of four cases in this study

As noted above, case study is usually seen as a research method which is chosen at the beginning of a study. Kemmis (1980) suggested that case study reports should recreate the research through rich descriptions of the 'action context' allowing the reader to imagine the social world of the study. After a conversation with Kemmis (Kemmis, S., 1995, pers. comm., 18 October) discussing that, for this research, case study was seen as a way to organise the reporting of the interview data, it was decided that the word 'case' would be used instead of 'case study'. Patton (1990) explained that a 'case record' pulls together and organises data into a comprehensive resource package. The case records for this study comprise the transcription and indexing of each of the interviews. Adelman, Jenkins and Kemmis (1976:141) referred to a 'case' as "an instance drawn from a class". That definition is particularly apt for this study as the mentoring stories obtained from the interviews were organised into four cases called pairs, triad, chains and webs . Each case includes several 'records' as explained in fuller detail in section 3.6. Together, the four cases illustrate the idea of a 'cascade of influence'.

Using cases to report the interviews is appropriate to this research study. It allows the recognition of the particular biographical contexts of the environmental educators in which mentoring is embedded. It facilitates the description of the processes and conditions by which those relationships were implemented. Only generalised insights may be drawn from these exemplar cases which highlight the uniqueness of each individual's relationship. However, they are useful in informing mentoring research about the process and internal dynamics of a mentoring cascade.

The opportunity to conduct 'linked interviews' with mentorees and mentors which were later analysed and categorised into four cases adds to the significance of the findings. Each case, through its in-depth concentration on a particularly type of mentoring relationship - pairs, triad, chains, and webs - provides a holistic picture of the cascade effect of a mentoring relationship in which unique and unanticipated features can be revealed. Hitchcock and Hughes' (1989: 214) listed characteristics of this kind of reporting.

> [There is] a concern with the rich and vivid description of events within each case ... [there is] an internal debate between the description of events and the analysis of events described, [and there is] a focus upon individual actors or groups of actors and their perceptions and accounts.

Tesch (1990:69) reiterated that "the purpose of qualitative research is not to specify every step and action, but to assure optimal informed decision-making during the research act". The reporting of the stories permits comparisons within the cases by looking at each pair of relationships - how they are similar or different, what elements within those relationship may be a factor in allowing the mentoring process to be passed on to another link. By looking across the cases, insights are provided into the nature of mentoring relationships so that the researcher can recognise patterns of similarities, pinpoint differences and account for anomalies. Eventually, the analysis leads to the conceptualisation of this study which describes the 'cascade effect' of mentoring by delineating the factors which promote the establishment of a mentoring relationship with a new person.

Thomas' (1990: 7) emphasised that "the reporting style for case studies is also flexible, but because of the nature of the data collected, it will be largely descriptive. This permits the evaluator to use unusual formats that may make the report more interesting and readable. A report that is *read* is more likely to be acted upon on". He chose not to include specific recommendations in his final report, but subsequent actions of the stakeholders indicated that a number of his points and suggestions were acted upon. Presenting the interview data through four cases will provide an interesting and readable report about the mentoring relationships. By describing the participants' own evaluation of mentoring, the recommendations of this thesis may become more meaningful to the reader and applicable to future professional development. In the end, Walker (1980:34) concluded, "It is the reader who has to ask, 'What is there in this study that I can apply to my own situation, and what clearly does not apply'".

3.5 The Research Design for the Study

This original research design of this study consisted of identifying leaders, sending out a survey questionnaire regarding their views on environmental education, leadership, mentoring and professional development, and following this up with paired interviews of those who nominated their mentors. However, Tesch (1990) reminds qualitative researchers that they must remain open to new possibilities. When mentors identified their previous mentor as possible interviewees, the research design was extended to include this unexpected dimension. The researcher, therefore, carried out the study in the following eight stages:

1. Names were solicited within networks of environmental educators in Colorado, USA and Queensland, Australia of those persons perceived to be acknowledged leaders by their peers.

   i) In Colorado the researcher used previously known networks *Project* WILD, *Project Learning Tree*, the Colorado Alliance for Environmental Education and the Colorado Association of Science Teachers to identify leaders.

   ii) In Queensland the environmental education network was researched through The Australian Association of Environmental Education, the Science Teachers Association of Queensland, the Marine Education Society of Australia, the Geography Teachers' Association of Queensland, The Department of Primary Industries, and the Queensland Department of Wildlife and Heritage.

2. i) A pilot survey was prepared which was sent to six leaders in each country across the fields of environmental education including secondary school teachers, environmental education centre directors, persons in outdoor recreation, community leaders, outdoor education specialists, and natural resources personnel.

   ii) The final questionnaire was developed from the pilot survey. One hundred participants were selected by cross-referencing the environmental education networks. A revised questionnaire was sent to fifty leaders in each country.

3. A qualitative analysis was conducted on the open-ended questionnaire responses using a word-processing program. A grounded theory approach was used for category formation and beginning theory formation.

   A quantitative analysis using descriptive statistical techniques provided summaries of background information on the leaders and ranked some of their responses.

4. The survey responses were analysed regarding the relationship of the leaders and their mentors in order to prepare questions for semi-structured interviews of mentorees and their mentors.

5. Selected leaders were interviewed to explain their views about their mentoring relationship and its importance to their professional and personal development throughout their careers.

    i) Paired interviews were conducted with the leader and his/her mentor whenever feasible to establish the reliability of the mentoring experiences.

    ii) 'Linked interviews' were conducted when possible to trace an emerging theme of a cascade effect from the mentor back to their own mentor or from the leader forward to their new mentoree.

    iii) The taped interviews were transcribed by the researcher.

6. Grounded theory methodology was used to, firstly, determine the properties and dimension of the main categories and, secondly, to distinguish the core concept.

7. The NUD.IST computer program was employed for data analysis.

    i) The meaning of the mentoring relationships was probed based on the theories generated and grounded within the data.

    ii) An analysis of data was written to answer the four research questions.

8. The recommendations were consolidated concerning the implications of mentoring relationships for the personal and professional development of environmental leaders.

3.6 The Implementation of the Design

3.6.1 The survey

3.6.1.1 Selecting the leaders

Strauss and Corbin (1990: 253) listed seven criteria for judging a grounded theory study (refer to p 127). The first criterion asks "Why/How the original sample was selected?" This section will address the issue of choosing the sample.

In Colorado the researcher chose as a primary network *Project WILD* (1992), an international program for environmental education used in all fifty states of the USA and seven other countries. The coordinators of the program from the Colorado Division of Wildlife trained in-service facilitators, mainly teachers and other natural resource personnel. Those facilitators who were particularly active and effective were invited to an annual leadership workshop to receive further training in leadership skills and updated information about new programs such as *River Watch. Project Learning Tree*, under the auspices of the Forestry Division, preceded *Project WILD* and many of the facilitators and multi-agency presenters worked in both programs delivering environmental education programs to schools and communities. The Colorado Association of Environmental Educators, is a broader network which includes leaders from business, industry, community and government as well as education. A list of leaders in environmental education was compiled cross-referencing these three membership lists as well as referencing the Colorado Alliance for Science, Colorado Association of Science Teachers, Colorado Soil Conservation Association, the Colorado Department of Education, and *Project Food, Land and People.*

As a newcomer to Australia, discovering the environmental education networks in Queensland in a limited period of time was a challenge to the researcher. Four realisations had to be dealt with in Australia.

Firstly, in order to gain entry into the networks, the researcher's integrity had to be established as an environmental educator. This was accomplished through part time teaching in the Department of Social, Business and Environmental Education of Queensland University of Technology (SBEE), becoming the graduate student representative to the Centre for Applied Environmental and Social Education Research (CAESER), offering Project *WILD* workshops to interested teachers and community persons, joining the Australian Association of Environmental Education (AAEE), and presenting environmental education sessions at annual meetings of the Science Teachers' Association of Queensland (STAQ) and the Marine Education Society of Australia (MESA).

Secondly the term 'environmental education' was seen in Australia as the bailiwick of geographers and not just the science educators as in the United States. This required understanding the organisational structure of the Geography Teachers' Association of Queensland (GTAQ) and making presentations at their conferences.

Thirdly, it is recognised that in Australia personnel who worked in natural resource positions were paid a living wage and tended to stay in those jobs, whereas in the United States a well-qualified person was often on minimum or part-time wages and consequently left the field of environmental education for more permanent employment (Langton, 1984; Sakofs and Burger, 1987; Snow, 1992a).

Lastly, Australians, of their own admission during interviews, tend to suffer from the 'tall poppy syndrome' (Mitchell, 1988), that is, shying away from the acknowledgment of leadership because it makes one stand out in an egalitarian society. At first, several participants felt uncomfortable with designation of environmental education 'leader' and/or the term 'mentor'. However, when the context of the study was explained to them, they were willing to participate.

The first contact with the Australian environmental education network was through a state-wide symposium called the *Fitzroy River Catchment Symposium* in Rockhampton, November, 1992. The list of participants became an important point of departure for selecting the leaders. Subsequent workshops by the Marine Education Society of Australia, the Science Teachers' Association of Queensland, and the Queensland Geography Teachers' Association were attended. Meetings were held with personnel from the Queensland State Department of Education, the Australian Association for Environmental Education, the Queensland Department of Environment and Heritage, the Department of Primary Industries, Brisbane Forest Parks and Queensland Conservation Association to learn of other key people. All of these contacts began to broaden the base for cross-referencing as the names of key leaders and their contributions to environmental education became clear.

In order to qualify as a 'leader' for this study the nominated person from both countries had to be:

1. active within the field of environmental education, that is their name appeared through more than one network;
2. recognised by their peers, that is through awards, title, position or activities; and
3. doing work over and beyond the normal parameters of their job description, that is extending into the community or wider environmental education field on a local, state or national level.

In the end more than seventy-five persons were listed from each country. Six leaders from each country were chosen for the pilot survey based on their representation of leaders across the field of environmental education. It was understood that their responses would be included in the final responses. For the final survey, fifty leaders from each country were selected from the various networks (refer to *Table 3.4* p 155). The lists were gender-balanced and had a broad representation across the field of environmental education including teachers and administrators, natural resources and government personnel, community and business representatives.

3.6.1.2 Designing the survey

After a review of the literature on environmental education, mentoring, and surveying techniques, a questionnaire was designed for piloting in Queensland, Australia and Colorado, USA. Part I sought information about the respondents' backgrounds, influences that propelled them toward environmental education, and their ideas about leadership, mentoring, and professional development. Part II asked questions about a specific mentor and that mentoring relationship. The aim of this pilot survey was not to produce findings, but rather to see if the questions would reveal information consistent with the stated aims, namely to:

1. find out if leaders have been mentored during their involvement with environmental education;
2. explore the timing and duration of the mentoring process;
3. understand why the mentoring relationship had been effective; and
4. clarify the issues by which mentoring might enhance professional development in environmental education.

3.6.1.3 A pilot survey

The pilot survey was mailed with a paid-postage return envelope to six people in each country who were identified as leaders through their known work and interest in environmental education. The people were paired for similar interests in each country: teachers who involved students in environmental education projects; natural resources personnel committed to environmental education beyond the scope of their job; community activists known for their stance on environmental issues; university lecturers involved in environmental education pursuits, personally and professionally; directors of environmental education centres who influenced both children and adults; and instructors of outdoor education with a strong interest in education *for* the environment. Although the participants' knowledge and commitment to environmental issues was known, their knowledge and experience of mentoring was unknown.

Phone calls were made to the Australian contingent and personal notes mailed to the USA participants. Of the twelve surveys sent, only one USA respondent failed to return it in the required time. The average time to fill out the survey was reported as one to one and a half hours. Comments about the overall quality of the pilot survey included: "needed in-depth thinking and reflection, well constructed, lets talk about it, rather long, space given adequate, shorten, less narrative, there is very little mentoring for community volunteers, felt insecure in 'definitions', thinking from an outdoor education perspective, great questions".

These notations led to a refinement of some section headings and specific wording of items for the final form of the survey. The comment sections allowed 'free writing' responses so as not to impose answers offered only in tick boxes and thereby provided an indication of question clarity. What was crucial to this study was to probe any differences in the mentoring relationship which might be unique for environmental educators. For example, question 4.2, asked about the distinctive aspects of mentoring for environmental education. Even though the word 'mentoring' could have suggested a process, most described a 'mentor'. Therefore the question was rephrased to read:

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> Please list key attributes which might *distinguish* a mentor in environmental education from a mentor in other areas.

For Question 6, The Mentor, some answered they did have a mentor, while others marked they had no mentor at all. However, several felt they could not answer this question because they had had more than one mentor. It was extremely important to this study that this question was clarified. Therefore, it was rephrased as:

> Have you had one or more mentors during your involvement with environmental education?
>
> No _____ (Please go to 7.6)
>
> Yes _____ one major mentor___
>
> many significant mentors____

This change encouraged those with multiple mentors to acknowledge other mentors, yet to describe the single most influential mentor for the purposes of the survey. The directions for those answering '*yes* ' read:

> Please describe the mentoring experience of the single most influential mentor throughout your career in environmental education.

The pilot survey, albeit quite small, gave general verification of the literature by eliciting similar categories of responses (Moore, 1982, Segerman-Peck, 1991). Problem areas, identified by respondents of the pilot survey, provided suggestions for improvement which were critical in refining the survey. Following the example of Limerick and Heywood's first report on *Project Mentoring, Networking and Women Management in Queensland* (1992), the researcher prepared a paper on the pilot study as a preliminary to how the final survey data might be analysed; it was not meant to suggest in-depth insights at that point. The Report of the Pilot Survey is included in *Appendix A*.

3.6.1.4 The final survey

The final survey instrument was designed in two parts. Part I sought information about the respondents' background, influences leading toward an interest in environmental education, ideas about leadership, leadership in environmental education and current leadership roles. It went on to query ideas about the concept of mentoring, specifically in environmental education, and characteristics of those mentors. The respondents described their concept of professional development, and how it might be distinguished for leaders and mentors in environmental education, how personal and professional development mesh, and finally, if the leader felt that he/she was at the stage to become a mentor for someone else.

Part II asked questions about a specific mentor and the mentoring relationship. Information was sought regarding the mentor's sex, age, cultural background, the beginning of the relationship, duration, how contact was maintained, the nature of the relationship, influence of the mentor for career and leadership choices, and the effectiveness of this mentoring relationship. They were also asked to provide the name of their mentor. A copy of the final survey questionnaire is provided in *Appendix B*.

The pilot reference group was similar to the intended target audience of one hundred leaders identified through networks which had acknowledged their work and interest in environmental education. After the final revisions were made in May, 1993, surveys were sent out to fifty leaders in each country. These were mailed with a paid-postage return envelope and followed up by a personal phone call or note to help ensure a good rate of return.

The introduction to the survey assured respondents of the confidentiality of the data collected. It stated that "all information from this survey will be treated in the strictest confidence and only the researcher will have access to the data. No identifying information will be included in my thesis and only general statistics and a summary form of comments will be compiled, unless permission is given".

Upon return each questionnaire was coded with a country number (1 Australia, 2 USA), a respondent number and an identifier corresponding to the first and last initials. Occasionally in the analysis of data, a passage will be quoted using the gender, the position, career title or an affiliation when this is important to the point being made. For confidentiality, only the researcher has access to the full names. The difference between countries and genders was not a major research question, nevertheless, the researcher has tried to be even-handed in including comments from both countries and both sexes under each item discussed in case any discrepancies were noted. Some names have been changed to pseudonyms at the participants' requests (see Appendix E). If necessary, extracts reported in the narrative text, can be cross-referenced with the researcher's master list.

It should be noted that to ensure consistency and ease of reading, all American spellings in quoted passages have been changed to the Macquarie standard using the spellchecker from Microsoft Word 5.0, 1991.

3.6.1.5 Response to the survey

Selected items from the questionnaire were numerically coded for a quantitative analysis using SPSS which yielded descriptive statistics of the leaders' background and some of their opinions. These are represented as percentages, rankings and graphs (de Vauss, 1991). Fifty-seven useable responses were received, however, only fifty respondents are represented in the quantitative analysis due to the lateness of some returns and the availability of using the statistical program. *Table 3.2* shows the demographics of the responses.

Table 3.2. Demographics from the respondents.

COUNTRY	50 PARTICIPANTS
USA	46%
Australia	54%
GENDER	
Female	54%
Male	46%
AGE	
under 35	28%
36-45	30%
46-55	24%
over 55	18%

Of the respondents considered, 54% were from Australia, split equally between fifteen men and fifteen women, while 46% were from the USA with fifteen women and ten men. Since this research is not meant to be a comparison between countries, the data which follows will refer to the combined sample.

The age groupings were originally designated as 18-25, 26-30, 36-40, 41-45, 46-50, 51-55, and 55+. Because only 4% were found to be under 30, the categories for age were reconfigured.

3.6.1.6 Authenticating the leadership sample

Leaders have been defined as people who induce their followers to act for certain goals that represent the values and the motivation - the wants and the needs, the aspirations and expectations - of both leaders and followers (Burns, 1978 in Carraway, 1990: 5). The researcher aimed to confirm that the selected sample was a group of active and acknowledged leaders involved in environmental education. (Tanner, 1980; Peterson and Hungerford, 1981; and Palmer 1993). The question of reliability of self-reported data was confronted by Butt (1993) when he used a collaborative autobiographical approach. He asserted that a researcher ascertains the 'truth' from what is told by participants. He suggested that one must accept at face value the other person's 'truth' and make meaning of their story from that point of view. With this rationale in mind, *Table 3.3* shows the leaders activity over the last ten years.

Table 3.3 A self-report by the leaders regarding their activity in environmental education leadership roles over the past ten years.

Environmental Leadership Activity	**This Year**	**Last Five Years**	**Last Ten Years**
Very Little-Little	15%	6%	12%
Frequent-Often	31%	25%	31%
Often - Very Often	**54%**	**69%**	**57%**

Table 3.4 Self-reported leadership roles in environmental education.

Area	Sector	Specialty	Activity
Education			
practitioners	primary	teacher	project director
			adult e.e. training
	secondary	science	Global lab project
		adult training	river monitoring
	environ. centre	director	curriculum devel.
	tertiary	pre-service	marine education
		in-service	Project WILD
		post-graduate	e.e masters/PhD
		research	rainforest
administration	Education Department	policy	geography/e.e
Government			
	city council	policy	e.e.
	state agency	environ / heritage	public information
	regional	forestry	e.e. information
	federal	EPA	e. e. literacy
Natural Resources			
	schools	projects	Saltwatch/Landcare
			River Watch
			Project WILD/PLT
			fieldtrips
	administration	policy adviser	soil conservation
			forestry
	community	rural	farmer groups
	training	marine	park management
Business			
		author	e.e. books
		education director	private e.e. sites
Community			
	project director	rural	conservation
Non-Governmental Organisation			
	consultant	conservation organisation	e.e. centres
	curriculum develop.	national	Food, Land, People
Environmental Organisations			
	president	forests	Forest Protection
	officer	marine	Littoral Society
	researcher/consultant	animals	koala/bird research
	vice-president	science	biologist
	management		wet tropics
	committee member		Windsong Found.

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The leadership roles of each of the respondents listed in *Table 3.4* are identified by the area of employment, the sector of work, the area of specialty and specific activities. For example, one respondent reports being a community project director dealing with rural conservation issues. Another is a secondary science teacher involved in the Global lab project. A third person works for an NGO as the national director of a new curriculum development project called *Food, Land and People*. The leadership sample represents a broad variety of environmental education areas - education, administration, government, natural resources, business, community, non-governmental organisations and environmental organisations.

3.6.1.7 Analysis of the Survey

The data from this survey was analysed from a Grounded Theory approach, that is, a qualitative research method which uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon (Strauss and Corbin, 1990: 18-19,24). The research procedure called 'constant comparative analysis' looked at the substantive data which comprises the area under study, in this case the survey questionnaire from selected leaders of environmental education and their nominated mentors. Deductive and inductive reasoning was used to consider the data from the statistical background and the open comments information. These were compared to each other in order to discover similarities, differences, patterns and common properties. As the concepts began to cluster, the method led to further comparison and category refinements.

As the text of the fifty seven questionnaires were read question by question, results were coded into categories of responses. Sections of text corresponding to the codes were copied, cut and pasted into word processing files under various headings. To protect the confidentiality of respondents, only a numerical identification was attached to each quotation (refer to *Appendix C)*, but these are not used when quoting comments.

Only this researcher undertook the analysis of data so that there was no intercoder reliability judge. Reliability was achieved by categorising only those responses to which explicit or prominent references were made with a preference for inclusive rather than exclusive coding. Repeated phrases were noted to show frequency of repetition, but no numerical data was intended to be derived from this process.

Preliminary codes were refined into a smaller number of final categories, thus incorporating various subcategories into metacategories. Preliminary categories were analysed for their properties and dimensions. Strauss and Corbin (1990: 61) defined 'properties' as "attributes or characteristics pertaining to a category", while 'dimensions' are "locations of properties along a continuum". An example is shown in *Table 3.5*.

Category	**Property**	**Dimensions**		
Philosophical Theory	Derived Leadership	past	present	future
Outside Knowledge	Dealing with others	students	peers	network

Table 3.5 An example of categories, properties and dimensions relating to Grounded Theory analysis.

Similarities were assessed across the surveys, leading to interrelated concepts using a grounded theory approach to qualitative analysis. This resulted in a 'flat' or horizontal index which offered some rich quotes, but in and of itself was not able to provide a theoretical framework.

3.6.2. The interviews

Powney and Watts (1987: 176-77) give a comprehensive checklist for reporting interview methodology which has been used as a guide to this section. These include: topics on the kind and context of the interview, characteristics of the participants, interview characteristics, the purpose of the interview, methods of data collection and reporting of the data.

For data collection, the researcher first visited the USA from May-July, 1993 therefore a special letter was included for Colorado respondents asking that the survey be returned to a local address. This gave the researcher access to questionnaire information and a chance to find out who had nominated their mentor so that interviews could begin. The preliminary analysis of data checked the pertinence of the semi-structured interview questions which had been formulated beforehand based on Seidman (1992) and Butt (1993). The set of questions prepared for the semi-structured interviews is supplied in *Appendix D.*

3.6.2.1 The pilot interview

Before embarking on in-depth interviews which could be scheduled during that visit, a pilot interview was held in May 1993 with a female participant in Denver, Colorado. Although the main goal of this pilot was to hone the researcher's interviewing skills, it was made clear that this data would be used in the final study. As with all subsequent interviews, a consent form was signed acknowledging confidentiality, asking if a pseudonym would be preferred, if their job description could be revealed, and if they wished to see a transcription on which to make any content changes. A copy of the consent form is shown in *Appendix E* explaining the rights, risks and benefits of confidentiality.

The pilot respondent was told that the interview would last approximately one and a half hours and would be audio tape-recorded. She was informed that the interview had three parts, the first being an autobiographical sketch of her interest in environmental education up to and including her current leadership position. Secondly, it would probe her relationship with her prime mentor, its beginning, development, and current status or ending. Thirdly, it would seek her opinions on how mentoring could be incorporated into the professional development of other environmental educators.

The interview was transcribed by the researcher. In listening to and reading the narrative, a range of potential issues was considered such as: was the researcher speaking too much, was the interviewee led to give certain answers, was there enough uninterrupted time to complete the questions without too much diversion, were rich digressions followed, and was the purpose of the interview accomplished.

After considering improvements which could be made for the interviewing process, such as following up on pertinent details and sharing some personal information when asked, a telephone call was made to those Colorado respondents who had returned their surveys supplying the name of their mentor. Interviews were set up with these original leaders.

3.6.2.2 The paired interviews

It was now possible to conduct 'paired interviews' (Kram, 1983), that is hold separate interviews with a mentoree and their mentors. Mentorees were given the option of having the researcher or themselves contact their mentor. Many preferred to do it themselves, saying that the interview pointed out they had never actually used the word 'mentor' when referring to that person and it might take them by surprise, nor had they ever properly thanked that person for fulfilling the role of mentor for them. Because the relationship had been long-term for many of the leaders, they frequently felt that it might be embarrassing to thank the mentor now, but this contact would give them a legitimate opportunity to do so. Later on when speaking to the mentors, many of them expressed their pleasure at being nominated by their mentoree for such a role and reported that the conversations between them had being very rewarding.

The interviews took place at a time and place convenient for both the participants and the researcher over a three year span. In Australia they were conducted during 1993-1994. One mentor interview of an Australian mentoree was fortuitously able to take place in South Africa in 1993. Other interviews from Colorado were completed from July-September, 1994. Using the same semi-structured questions format, one interview was completed by mailing an audio tape, another was faxed back after e-mail contact, and two were completed by telephone in 1995. Only one person asked for a copy of the verbatim transcription and permission to negotiate any quotes which might be used. One person asked that a pseudonym be used and one gave permission to use initials only. All tapes are archived, as is the master list of names and countries. The complete schedule of interviews is supplied in *Appendix F.*

3.6.2.3 The linked interviews

Remembering that Roche (1979) had talked about a 'ripple effect' the researcher anticipated that the paired interviews might lead forward to someone new who had been mentored, thereby giving what she began to term a 'cascade effect'. However, what was not foreseen was the willingness of mentors to flesh out the details of their own mentoring relationships and having the possibility of interviewing the mentor's mentor. This gave rise to the idea of conducting 'linked interviews', separate interviews leading back to the mentors' previous mentors and forward to new mentorees. This development required flexibility in the research design as suggested by Tesch (1990).

3.6.2.4 Constructs of the researcher

When I use a word, it means just what I choose it to mean, - neither more nor less.
Humpty Dumpty *from Lewis Caroll*

As the 'linked interview' process continued back from the leader to the mentor, to the mentor's mentor and stories were told about the mentor's mentor's mentor it became confusing to distinguish one layer of mentoring from another. Therefore, the researcher made an organisational decision to use a 'construct of terms' to clarify the various relationships among mentorees and mentors which would aid in the analysis of the data.

The choice of terms was based on prefixes from the Greek or as defined in the Macquarie Dictionary (1987: 199, 301, 304, 407). 'Alpha' mentoree means first and designates the leader originally identified, while their new mentorees were called 'beta' meaning second mentoree. 'Prime' mentor means the principal one and designates the original leader's mentor. 'Pivotal' is defined as that on which something turns or depends, in this case several people depended on the same pivotal mentor. The mentor's mentor was termed 'supra' mentor meaning 'above' and the layer of mentor furthest removed from the original leader and 'over' the others was designated 'hyper' mentor. The terms are fully defined as follows.

Alpha Mentorees - original leaders who responded to the survey, gave the names of their mentors, were willing to become interview participants.

Prime Mentors - mentors nominated by original leaders (alpha mentorees) who were willing to become interview participants; some told about their own mentor during the interview.

Pivotal Mentors - mentors nominated by more than one original leader (alpha mentorees) who were willing to become interview participants; some told about their own mentor during the interview.

Supra Mentors - mentors "above" nominated by prime or pivotal mentors; some were willing to become interview participants; some told about their own mentor during the interview; others were unable to be contacted for an interview due to circumstances such as distance, retirement, or death.

Hyper Mentors - mentors "beyond" nominated by supra mentors; all were unable to be contacted for an interview due to circumstances such as distance, retirement, or death.

Beta-mentorees - new mentorees of the original leaders (alpha mentorees); some were willing to become interview participants; others were unable to be contacted for an interview due to distance.

Four developments occurred which necessitated some changes in the placement of a few of the participants within the mentoring construct of terminology. Firstly, *Figure 3.5* shows how some leaders nominated each other as mentors. For example, participants *A* and *B* were both original leaders, however, *A* nominated *B* as the mentor. The researcher decided, based on the breadth of leadership activity, to move participant *B* to the level of 'prime mentor' and to leave *A* as an 'alpha mentoree'. In another example, original leaders C, *D* and *E* were called 'alpha mentorees', but in sorting out the relationships, *C* chose *D* as the mentor,

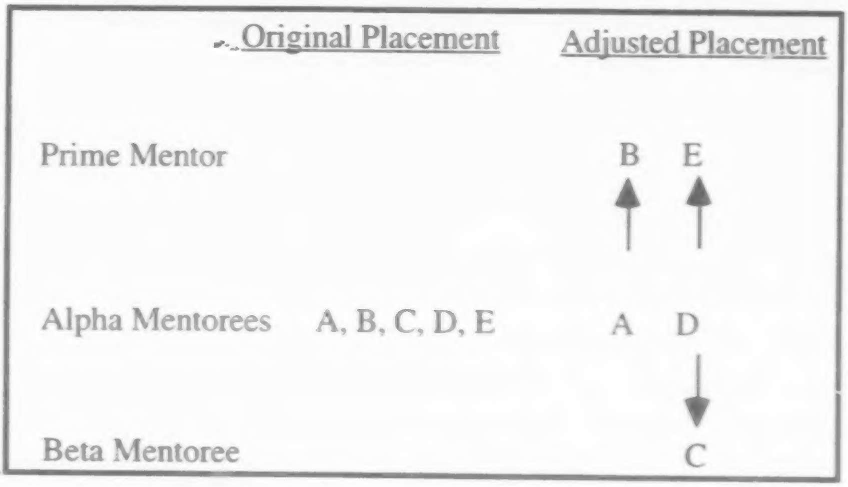

Figure 3.5 Adjusted placements of 'alpha mentorees' using the researcher's construct of terms.

while *D* nominated *E* as the mentor. Based on the length of the relationships, these participants were reordered with *C* being designated as a newer or 'beta-mentoree', *D* retained as the 'alpha mentoree' and *E* moved back to 'prime mentor'.

Secondly, the idea for the term 'pivotal mentor' began to arise because several respondents from the survey had nominated the same person as their mentor. This pattern was true for both the Australian and the US samples, however, only the Australian respondents were able to be interviewed due to logistical considerations.

Evidence for the construct of a 'pivotal mentor' was found twice among those who were available to be interviewed. In the first example, three mentorees were each known from different parts of the environmental education network - one was in business, another a university academic, and the third a community consultant, yet they all gave the name of a common mentor. In the second example, the mentorees again came from different perspectives - one from consulting, one from the Department of Education, and one from a government natural resources agency and they also nominated a common mentor. This webbed pattern is illustrated in *Figure 3.6.* It became clear that to understand this pattern of 'multiple mentoring', any interviews held with 'pivotal mentors' would need to address the relationships with each mentoree separately.

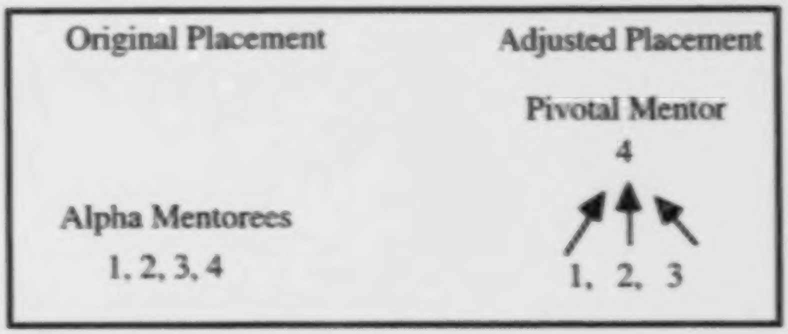

Figure 3.6 Adjusted placement of the 'pivotal mentor'.

Thirdly, another avenue of possibility arose from interviews with the 'prime' and 'pivotal' mentors. They began to recount their own relationships with their mentors. Not all of these 'supra' mentors were able to be interviewed due to time, geographical distances, retirement, or in some cases death of that mentor.

Fourthly, several of the 'supra mentors' who were interviewed referred, yet again, to their own mentors, called 'hyper mentors'. *Figure 3.7* presents a visualisation of how these terms are used within two different examples of 'linked interviews'.

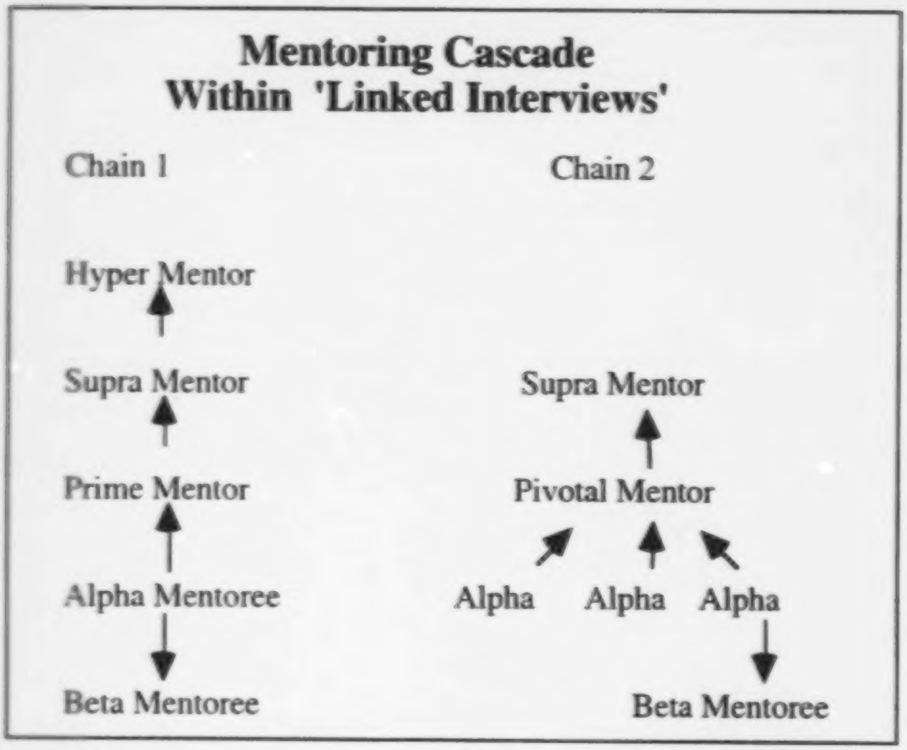
Mentoring Cascade
Within 'Linked Interviews'
Chain 1
Chain 2
Hyper Mentor
Supra Mentor
Prime Mentor
Alpha Mentoree
Beta Mentoree
Supra Mentor
Pivotal Mentor
Alpha
Alpha
Alpha
Beta Mentoree

Figure 3.7 The researcher's construct of terms resulting from 'linked interviews'.

It is recognised that another researcher might well have chosen to name these relationships differently or to have given them numbers. For example, terms like 'mentoring generations' could have been used, but that would have implied an age difference which was not always found in this study. A limit to the naming system chosen by the researcher is that a person could serve in a different mentoring role for someone not included in this leadership sample. For instance, an alpha mentoree could be a prime mentor for someone not identified in this study. Or, a supra mentor could acknowledge a more deliberate mentoring relationship with someone outside this group thereby being his/her prime mentor. However, the follow-up of these other mentoring relationships was outside the scope of this study.

Given these limitations, it is felt that the terms described above are useful for this study in understanding the effectiveness of the various mentoring relationships as related to the researcher. The emphasis of the analysis is not on positioning within the mentoring cascade, but on the experience of the relationships between any given pair of mentors and mentorees, particularly, the perception, acknowledgment and deliberateness of those relationships. The researcher's construct of 'mentoring cascades' is substantiated through a detailed analysis of thirty interviews with grounded data and generation of theory to support it. A summary of the linked interviews is outlined in *Table 3.6*.

These 'constructs of the researcher' are used not as ends in themselves, nor do they show any hierarchy of importance. They are, instead, a way to distinguish the relationships within a mentoring cascade which will be presented in four narrative cases which highlight mentoring relationships of pairs, triads, four-person chains and seven-person webs. The terms show relative positions for comparison across the records in each case and among the cases.

Table 3.6 The categories of participants involved in 'linked interviews'

The Mentoring Cascade is based on 30 linked interviews with original leaders, their nominated mentors, the mentors' mentors and new mentorees.	Participants gave descriptions of nine other mentoring relationships with persons not able to be interviewed.
Total Interviewed (30)	**Total Described (9)**
17 original leaders	
Placement in Mentoring Schema	Placement in Mentoring Schema
1 pivotal mentor	3 hyper mentors
1 prime mentor	3 supra mentors
13 alpha mentorees	3 beta mentorees
2 beta mentorees	
13 other interviews held	
Placement in Mentoring Schema	
4 supra mentors	
1 pivotal mentor	
7 prime mentors	
1 alpha mentoree	

3.6.2.5 Narrative report of four cases

The analysis of the thirty interviews and nine descriptions were grouped into four cases with each case being based on several records of different mentoring relationships. Case One involved three 'paired' interviews between alpha mentorees and prime mentors, while Case Two included two 'triad' relationships between alpha mentorees and prime mentors then between prime mentor and supra mentors. Case Three traced back three 'chains' of relationships to hyper mentors while Case Four examined two 'webs' of relationships involving pivotal mentors and beta mentorees. The organisation of the case narratives is shown in *Table 3.7.*

Table 3.7 Four mentoring cases (1-4) with the types of participants in each records (a-c).

Case and Records	**Interview Participants**				
1 a,b,c **Pairs**		Alpha Mentoree	Prime Mentor		
2 a,b **Triads**		Alpha Mentoree	Prime Mentor	Supra Mentor	
3 a,b,c **Chains**		Alpha Mentoree	Prime Mentor	Supra Mentor	Hyper Mentor
4 a,b **Webs**	Beta Mentoree	Alpha Mentoree	Pivotal Mentor	Supra Mentor	

3.6.2.6 Analysis of the interview data

The full texts of the interviews were entered into NUD.IST and read line by line with data being entered into a coding scheme. The indexing nodes were defined by the researcher based on indigenous and exogenous codes found by constant comparative analysis of the data as well as more conceptual categories suggested in the text. The researcher followed the advice of Strauss and Corbin (1990: 50) who state:

> Since discovery is our purpose, we do not have beforehand knowledge of all categories relevant to our theory. It is only after a category has emerged as pertinent that we might want to go back to the technical literature to determine if this category is there, and if so what other researchers have said about it.

An advantage of the computer program, NUD.IST, was that the full 'concept map' of codes did not have to be formed in advance, but was added to as the coding progressed. The codes were analysed for reliability by checking the lines indexed, spreading the text to make sure the quotes were in context, looking at their frequency across the interviews, and by determining the vitality of the quotes which would support the emerging themes. An example of a 'results file' is shown in *Appendix G.*

The fractured data was regrouped by themes into axial codes and referenced by different index numbers. 'Axial coding' is defined as "a set of procedures whereby data is put back together in new ways after open coding, by making connections between categories. This is done by utilising a coding paradigm involving conditions, context, action/interactional strategies and consequences." A sample of an Index Code is provided in *Appendix H.*

As the analysis progressed, key concepts and their sub-categories were assessed by referencing an hierarchical indexing tree shown in *Figure 3.8*. Large concept nodes such as '2 autobiography' can be subdivided into more detailed nodes like '2 5 9 tensions'. These nodes could be broadened into wider topics or collapsed into fewer categories as the analysis was refined. Memos could be added to each indexing node regarding the evolving theory shown by the indexed lines. Most important to this process is that anytime a quote was pulled from the indexed lines, it could be spread to include lines, paragraphs or pages above and below that section in order to ensure that its context was fully understood.

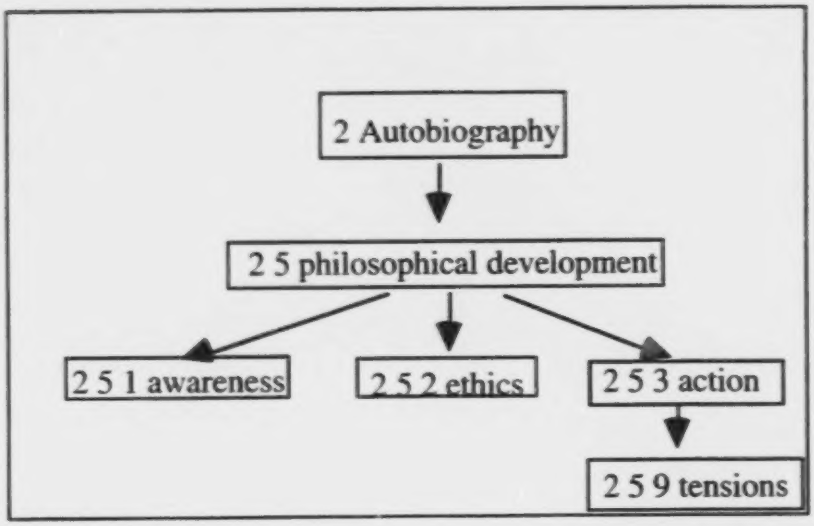

Figure 3.8 A NUD.IST tree diagram to investigate philosophical development.

Another method of analysis offered through NUD.IST was text searching which allowed quick scanning across the interview transcripts for concept words such as trust, support, friend and personal values *(Appendix I).* Pattern searching was also employed for words such as deliberate/ conscious/aware, but the researcher could also add text passages which fit that concept to the same indexing node (*Appendix J).* Each node could be queried and a report made if appropriate to the developing theory.

For example, philosophical grounding is defined by the researcher as a system of personal beliefs based on self-refection regarding environmental concerns. In order to probe the validity of this definition, survey respondents were asked to express their level of agreement to the proposition that leaders in environmental education need strong philosophical beliefs in order to deal with the controversial issues inherent in this field. Their answers, coded by country and respondent provided information such as:

> *We deal with ethics, political beliefs and learnings, and values to do with the environment.* (1-35)

> *... seeking truth about the biotic world and mankind's impact for the purpose of revising behaviour...*(2-14)

This same issue was probed for a fuller explanation during the interviews. The idea of philosophical congruence has been validated for this study by looking across the data through a NUD.IST search called 'personal values'. Not only are these words pulled out, but also the researcher can decide if certain other text passages fit into this category node as well. Examples from the interviews include:

> *People are in this field because of an internal drive that comes from their value system and actually drives their belief system.* Cem lines 580-582

> *The scope of impact these days are such that you can't just live locally. You are being impacted by so many things that are much broader issues than just your own district.* Charles lines 591-594

> How do you keep your own philosophical grounding?

> *It comes down sometimes to very pragmatic things. Sometimes you end up talking about the financial values. Sometimes it is spiritual values.* Charles line 600 -604

> *I don't think you have to have these real strong philosophical beliefs that say, you can never cut a tree, that sort of thing. But you have to have some sort of, I like to use the word 'ethic', and some values, but I don't think you have to be real severe. Philosophically, I agree that you do have to have some level of commitment and understanding of what you do and how you get that message across.*
>
> Pattyanne lines 128-134, 146-148

Who would you choose for a mentoring program?

> *I suppose the type of people who would do their job even if they weren't paid a lot of money. They've got some fairly good values and they think for the right reasons ... I think if people can connect on that spiritual, that values level, that is where the relationship starts and all the other facts and figures come a lot later.*
>
> Diane lines 454-457, 491-494

Figure 3.9 provides a different example of an indexing tree. Another advantage of using NUD.IST in this study is that the participants of the interviews were often speaking from several points of view. They could tell of themselves as a mentoree, speak as a mentor, be referred to as a mentor, or be described as a mentoree. These various 'voices' could be coded to check, for example, if they felt there was a difference in the development of their mentoring relationship when they were a mentoree as opposed to when they were a mentor.

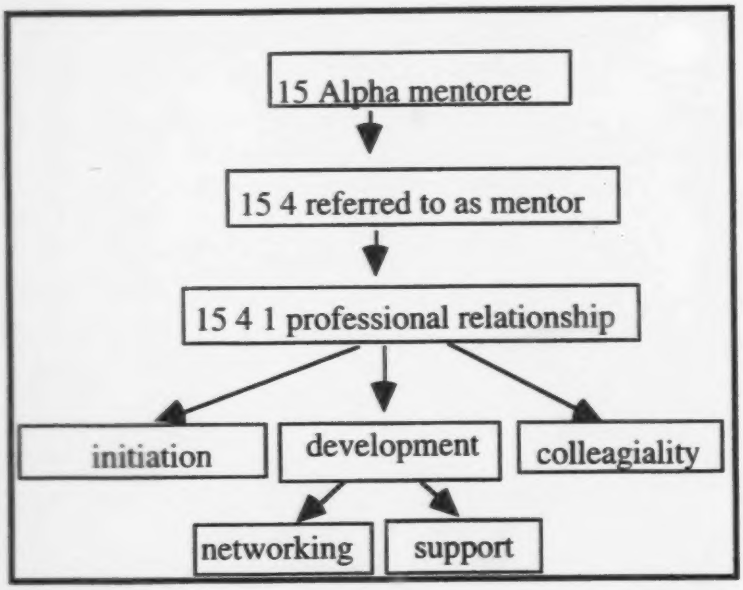
15 Alpha mentoree
15 4 referred to as mentor
15 4 1 professional relationship
initiation
development
colleagiality
networking
support

Figure 3.9 A NUD.IST tree for analysing alpha mentorees when they are referred to as mentors.

Finally, relationships between concepts such as deliberateness and mentoring were investigated through NUD.IST using the operations of 'collect', 'inherit' and 'vector analysis' which are defined in the Glossary of Terms in *Appendix K.* The data from the interviews could be compared with the open comments from the surveys revealing an analysis which would 'ground' the theory of this research. A detailed report of how the final core concept was arrived at will be presented in Chapter Six.

3.7 Summary

Chapter Three has described the theoretical justifications for choosing a qualitative research paradigm, the methodology of grounded research, the methods of survey, interview and case reporting, and the technique of computer aided analysis. It has also described the ethical considerations involved in conducting such research (p. 152, 158-9). In addition, the first two criteria, put forward by Strauss and Corbin (1990: 25) for interpreting and judging a grounded theory study have been discussed: the selection of the original sample and the procedures used to develop major categories.

In order to answer the research questions, Chapter Four will interpret the data generated from the survey questionnaires by addressing the criteria regarding tracking the events, incidents and actions that point to major categories (Strauss and Corbin, 1990: 112-113). Chapter Five, through its four narrative cases, will show evidence of the major categories of perceived, acknowledged and deliberate mentoring across the interview data explaining how the hypotheses and the conceptual relationships among categories were formed. An account will be developed through theory building which "by its very nature, implies interpreting the data, for the data must be conceptualised and the concepts related to form a theoretical rendition of reality" (Strauss and Corbin 1990: 22).

Chapter Six will use the findings of the study to examine any discrepancies and explain why and how the core category was chosen. It will use this theoretically informed base to provide answers to the four research questions and to suggest a framework for recommendations concerning mentoring and the professional development of leaders in environmental education.

Chapter 4

Would I had phrases that are not known, utterances that are strange in new language that has not been used, free from repetition, not an utterance which has grown stale, which men of old have spoken.

An Egyptian scribe fixed those words in stone at the very dawn of recorded utterances - already a millennium before Homer. James Gleick, 1992: 124

4.0 Introduction to the Interpretation of the Survey Data

The goal of this thesis is to understand the mentoring experiences of identified leaders in environmental education. Chapter Four, firstly, presents data from the survey which provides autobiographical background of the leaders and explains their views on leadership, mentoring and professional development. Secondly, the data provides additional information from those leaders who have been mentored outlining the timing and duration of the mentoring process as well as elucidating the effectiveness of their relationships. Throughout this chapter certain terms will be defined in context, but they can also be referenced in *Appendix K.*

The survey questionnaire (see *Appendix B*) was the initial instrument chosen to provide data on the background of the leaders, the influences for choosing environmental education careers and their leadership roles. This information gave confirmation that the sample group was, in fact, active and acknowledged leaders in this field. It also allowed the examination of various categories of personal experiences and educational backgrounds which initiated and developed their involvement with environmental education. Another section probed the professional development needs of these leaders. The final sections of the questionnaire yielded more specific data about the mentoring relationships.

4.1 Contextual Background of Respondents

Following the lead of other researchers who sought to understand the reasons why leaders become aware of and choose to select careers in environmental education (Tanner, 1980; Peterson and Hungerford, 1981; Newhouse, 1990; Palmer, 1993), the first part of the survey solicited information regarding personal experiences and educational background which initiated and developed the respondents' involvement with environmental education.

4.1.1 Initiation of interest in environmental education

From the open comment responses received on the survey, a wide range of themes was identified and grouped into the first meta-category, *initiation of interest*. Labels were placed on discrete items identified within the text and these were then classified by comparing the concepts until a more abstract category emerged. Strauss and Corbin (1990: 61) described this process as "a classification of concepts [which] is discovered when concepts are compared against one another and appear to pertain to a similar phenomenon. Thus, the concepts are grouped together under a higher order, more abstract concept called a category". This process can be visualised in *Table 4.1.*

Table 4.1 A categorisation of factors which initiated the leaders' interest in environmental education.

Meta-category - initiation of interest in environmental education			
Categories	**Properties**	**<--------Dimensions--------->**	
Personal Attitudes	Family	childhood	adulthood
	Friends	family	peers
	Others	neighbours	community
Knowledge Base	Courses	formal	informal
	Level	undergraduate	graduate
	Types	science	field-based
		geography	biology
	Professional Development	informal networks	conferences
Social Attitudes	Concerns	pollution	land degradation
	Awareness	knowledge	action
	Involvement	conservation movement	formal organisations

Substantive categories have concrete titles often taken directly from the descriptive language in the survey data itself. For example, descriptions of experiences were put in a category called, *personal attitudes.* Each category was distinguished by properties, that is, attributes or characteristics pertaining to that category. The category, *personal attitudes*, had properties which were named *family, friends* and *neighbours*. Dimensions were then added which located the properties along a continuum. For example, the category *personal attitude*, given the property *family* which could stretch along dimensions from *childhood* through *teens* to *adulthood*.

The meta-category, *initiation of interest,* had a cluster of three substantive categories: *personal attitudes, knowledge base* and *social attitudes*. Evidence for this classification is grounded in the data from the survey respondents.

4.1.1.1 Personal attitude

Personal attitudes toward environmental education were often rooted in childhood experiences through family settings. Comments supporting this evaluation included:

> *Formative childhood spent growing up in the bush-practically no toys or other means of entertainment, so [I] observed the bush plants and animals; that stayed with me.*
>
> *living on the edge of a city; mother who loved animals, three brothers crazy about wildlife; house full of reference books.*
>
> *My mother took us camping and fishing throughout my childhood - this allowed me to roam freely and explore and learn from nature. Plus the proximity to a wild-ish open area.*
>
> *Grandfather was my 'Henry David Thoreau'. I've wondered, too, whether there is not somehow the passage of a disposition either genetically or through some yet to be discovered process. One of my great-great grandfathers was a forester in Sweden.*

Initial interests in environmental surroundings were expanded by a widening circle of acquaintances such as friends and neighbours and participation in more independent activities such as scouting, hiking clubs and individual nature experiences. For some, these experiences broadened from avocation to vocation establishing a personal attitude toward environmental education which carried over into adulthood and is reflected in the career positions held by these leaders. One respondent cited a tertiary background in applied science which led to work with conservation councils; another became an agricultural extension agent working with wildlife projects.

4.1.1.2 Knowledge base

Personal attitudes were enhanced by an initial environmental *knowledge base* which was gained through resources ranging from books to people to media. One person mentions television noting, "as a kid, 'Nature Walkabout' was pretty inspiring", while others mention books by Joy Adamson, Rachel Carson and Aldo Leopold. Rudimentary knowledge was extended through formal coursework with respondents from both countries specifically mentioning geology, biology, geography, agriculture and environmental science while stressing "fieldtrips were the key".

4.1.1.3 Social attitudes

A *social attitude* favourable to the goals of environmental education was initiated by concerns and involvement. Sample responses included:

> *Father was a professional academic ecologist ... [it was an] environment which valued social responsibility.*
>
> *[There was an] awareness of lack of public understanding of environmental issues.*
>
> *a life-long observation and concern about the future.*

Additional comments show that *social attitudes* were piqued by concerns regarding pollution and land degradation. This led to further involvement in environmental education spanning informal conservation activities to being part of formal organisations.

4.1.2 Development of interest

These initial *personal attitudes* informed by an environmentally sensitive knowledge base led to *social attitudes* that were conducive to the respondents becoming more involved with environmental education issues. *Table 4.2* depicts the second meta-category, *Developmental Interests*, through four substantive categories - *personal attitudes, knowledge base, experience* and *communication.*

4.1.2.1 Personal attitude

Personal attitudes again emerged as an important category for continued environmental interest with dimensions developing outward from family and friends to teachers and mentors. Reasons cited range from "working with environmentally conscious teachers" to "student teaching in science education with a leader in environmental education". Eight respondents mentioned individuals, whom they later identify as their mentors, as being important in developing their interest in environmental education. One respondent described the influence of a particular botanists, another said that "encouragement and mentorship to change careers came from a close friend and now, renowned naturalist".

Table 4.2 Influences which further developed the leader's interest in environmental education.

Meta-category - development of leader's interest in environmental education			
Categories	**Properties**	**<--------- Dimensions ------------->**	
Personal attitudes	Teachers Friends	environmentally conscious	committed behaviours
Knowledge Base	Courses type	formal undergraduate classroom	non-formal graduate field-based
	Travel	nationally	internationally
	Projects	local	global
	Professional organisations	local	international
Experience	field-based	one-off	repeated
Communication	Students Adults	pre-service job-related	post-graduate in community

4.1.2.2 Knowledge base

The *knowledge base* of these prospective leaders was developed as university undergraduates and graduates particularly through courses involving field-based work. One person stated, "excellent professors in college enhanced my basic personal interest". Travel, projects, professional work including voluntary stints, professional development, further job and leadership training are important dimensions. Not only people and experiences have had an impact, but respondents cite the influence of books such as Joseph Cornell's *Sharing Nature with Children* and "learning about the larger perspective of a new cosmology [through authors like] Thomas Berry, Matt Fox, and Brian Swimme".

4.1.2.3 Experience

The developing *personal attitude* and the expanding *knowledge base* manifested themselves in early career *experiences* of the respondents. "Teaching experience in science/social education (integrated approach)" and "involvement in environmental politics and interest in socially critical education" were seen as important. In addition to participation, the environmental educators from this survey began to lead project clubs and field-based courses.

4.1.2.4 Communication

During their development phase, the leaders espoused a heightened sense of personal reflection. One participant explained that "becoming a grandmother (expanded her) thinking about 7th generation decision making". The need to communicate an environmental philosophy is evidenced from comments concerning "increasing consciousness of global problems" and "recognition of general common ignorance by the public of the roots of environmental problems". One respondent summarised this communication category as a "personal desire/ambition to change the status quo [for] greater/increased political awareness".

In summary, some respondents developed their environmental concern from a childhood love of nature and the outdoors, followed by years of broadening their knowledge base both formally and informally. This led to wider experiences and better communication skills which pointed to environmental education as a possible profession. This first section of the survey has provided some autobiographical details which set the stage for the receptiveness of mentoring.

4.2 Leadership in the Field of Environmental Education

In order to understand fully the personal and contextual background of leaders in environmental education, survey section 3.0 was designed to probe the respondents' views of leadership attributes, the place of leadership in organisational hierarchies, the relevance of philosophical beliefs to environmental issues, and opportunities to be kept updated in the field. By reading the 'open comments' from the survey respondents, the desired attributes of leaders in environmental education were identified in the respondents own words and phrases. These are summarised in two broad categories with six properties of varying dimensions as represented in *Table 4.3* and are discussed in the following sections.

Table 4.3 Leadership categories derived from the respondents' opinions expressed in open comments.

Meta-category - leadership attributes for environmental educators			
Category	**property**	**<---------dimensions--------->**	
Internal Characteristics	personality attributes		
	attitude	awareness	actions
	knowledge	basic	expanding
	environmental ethics	concern	enactment
	leadership style	ideas	action
External Expression	concern for others	personal	professional
	tolerance	local	global
	influence	general	specific

4.2.1 Leadership attributes

The first category, *internal characteristics*, is subdivided into three properties, firstly, *personality attributes* which incorporates the leader's *attitude* and *knowledge*; secondly, *environmental ethics* showing the dimensions from concern to enactment; and thirdly, *leadership style* giving a continuum of attitude to action. Leadership style is defined as a particular, distinctive or characteristic mode of action (Macquarie, 1987:

402). The next broad category is *external expression* showing three different properties: *concern for others*, *tolerance* and *influence*. Choices for the categories, properties and dimensions were grounded by explicit comments from the data.

4.2.1.1 Internal characteristics

Personality attributes - attitude and knowledge

Respondents indicated that it was important for a leader in environmental education to start with an awareness based on "curiosity, excitement, wonder, dedication, and imagination" and extend to a "diversity in the ways of enjoyment - the arts including poetry, music and visual arts". People from three different orientations cited similar ideas about what makes an effective leader as shown in *Table 4.4*..

Table 4.4 Personality attributes for leaders.

Area of environmental education	Personality Attributes for leaders
business/teaching	*persistence, consistency, insistence*
community/government	*determination-tolerance*
natural resources	*the three 'p's' personality, patience, persistence*

Respondents also suggested that leaders should be willing to "take risks and experiment", "tackle the impossible", volunteer time and money, and be "prepared to sacrifice [his/her] own activities to give time to co-workers".

Typical comments indicated that the knowledge of an environmental leader should begin with broad-based academic training and widen to a breadth of experience in ecology and social development. It should also expand into learning about environmental education. This was seen as being "a good scientist, up-to-date with current trends". The *internal characteristics* of an educational leader were summarised by one respondent as "being an eager student/learner yourself with a desire to learn/grow from the teaching process".

Environmental ethics - concern to enactment

According to the respondents, personal characteristics of leaders described above should be underpinned by an environmental ethic. They suggest that this ethic is demonstrated by a value driven concern about environmental issues which leads to an enactment of those values within one's lifestyle. It may stem from "an acute awareness of the interdependent web of all life to other resources. [It results] in humility to accept one's ignorance, yet courage to seek truth based on ecological rather than man-made economic concepts" . This becomes "a genuine love and concern for the environment [with] the desire to pass on the knowledge and means of conserving it".

Further comments argued that the environmental leader should be "devoted to a lifestyle compatible with sustainable development and living 'lightly' or 'green' [with a] commitment to the vision". Given the "ability to apply their values to their work", leaders in environmental education could enact their beliefs by modelling appropriate environmental practices and "working in the field with peers and students to gain an appreciation of the environment and also its importance and significance for the now and for future generations". In summary, this ability to understand the needs of both nature and humans enhances "an understanding of the spiritual, moral and intellectual value of the world".

Leadership styles - ideas to action

The respondents identified certain attitudes and actions as important for leaders in environmental education. Comments reinforced that a leader "does not have to be a dynamic sales person type" and perhaps "leadership in environmental education should eschew the qualities sometimes associated with leadership in the 'conventional' mode - domination, affectation, dogmatism". By comparison, other respondents noted that leaders may need to be "a bit left-wing", an entrepreneurial, activist having "political savvy" with "realistic goals (achievable)".

The research data shows that the personal attitudes described by the respondents encourage a leadership style which fosters the ability to listen and involve many people, to recognise value in others, and to organise and delegate authority. Several people advocated that adopting a 'systems approach' to synthesise and communicate would mark the good administrator/time manager needed in environmental education. This "persuasive advocacy" coupled with "a strong business sense that can balance sustainable development with profit" would allow for the "ability to question the status quo in an apparently non-threatening manner", work toward the "emancipation for change in individuals rather than use behaviouristic, directed, transmititive practices", and allow for negotiation that is, "willing to compromise or work toward group consensus".

Responses indicated that this style of leadership could lead to environmental actions which publish and market ideas, initiate and "develop new programs/concepts to fill in areas that are lacking" and become not only a "network with others in the field, but also a link with others outside the field with similar approaches". In summary, the research concerning internal characteristics of environmental leaders indicates a need to possess a personal attitude that shows commitment to the ethics of environmental education coupled with a leadership style that allows for empowerment and action by others.

4.2.1.2 External Expression

Respondents of the survey described an environmental leader as being a self-motivated, value driven personality, solidly grounded in environmental science and committed to education in the broadest sense. The data went on to suggest how the ethics of leaders could be expressed in an external manner.

Concern for Others - personal to professional

Various comments described a leader who displays a personal concern for others with a humanitarian interest which is "dedicated to 'whole' person education - physical, emotional, cognitive (and) spiritual", encourages personal development, promotes others' aims and achievements, and shows a basic "concern for peers and students and interest in their research, activities and studies". This enactment of personal concern extended to the professional work of the leader in environmental education. Respondents also indicated that leaders should:

> *be able to converse at all levels-community, school and academia;*
>
> *convey an appreciation and understanding of [sound scientific knowledge of the concepts] at all levels;*
>
> *explain new/sometimes complex ideas in a simple form; and*
>
> *[allow] the people using your programs to be successful and grow in awareness and abilities.*

Tolerances - local to global

Respondents indicated that concern for others both personally and professionally led to a tolerance of differing opinions. They valued "a perspective that environmental education is not just science education", but that it is "essential to have a balanced view - critical to have an understanding of all areas involved". This appreciation of different perspectives extended to a broad based global approach where a leader in environmental education must exercise "critical thinking about the world around us", respect differing opinions, allow for fair treatment of issues examining both sides/perspectives, and importantly, develop "compassion for those who lack enlightenment".

It was indicated that such activities can be specifically accomplished through cross-discipline, integrated, and interdisciplinary approaches, not only in formal education settings, but also in government and community programs which educate *for* the environment. It was felt that to implement such approaches, it is necessary to have an "ability to translate problems and insights from a technical basis into commonly understood language and analogies" along with the "imaginative use of field situations to suit current audience/participants". The property of tolerance was described as being able

> *to see that others need to be shown what you can see regarding environment;*
>
> *to pass [personal awareness and knowledge] on and to make it interesting; and*

to [cultivate] an insatiable desire for learning and sharing what is learned.

Influences - general to specific

Survey data from the question regarding key attributes for leadership in environmental education suggested that a 'cascade of influence' may emanate from leaders who have developed an environmental ethic which they demonstrate in their personal and professional lives and may endeavour to pass on to others. Their leadership style is 'hall-marked' by general knowledge and skill, but expressed by a specific concern for others, a tolerance of differing perspectives regarding local and global environmental issues, with a genuine desire to pass on their commitment within the multi-faceted arena of environmental education, be it scientifically or sociologically grounded, formally or informally taught, based in education, government or community.

4.2.2 Philosophical beliefs of leaders

Philosophical grounding is defined by the researcher as a system of personal beliefs based on self-reflection regarding environmental issues which can quite often be controversial. In order to probe the validity of this definition, survey respondents were asked to express their level of agreement to the proposition that leaders in environmental education need strong philosophical beliefs in order to deal with the controversial issues inherent in this field. As shown in *Table 4.5,* eighty-four per cent of the forty-nine respondents answered this question either *strongly agreed* or *agreed* to the proposition.

Table 4.5 Reactions to Question 3.3: the need for strong philosophical beliefs to deal with controversial issues in environmental education.

The Need for Philosophical Belief N= 49 /50	
Strongly Agree	43%
Agree	41%
Neutral	4%
Disagree	10%
Strongly Disagree	2%

One respondent remained *neutral* saying, "Politics and compromise are equally important in progression of aims". Several others *disagreed* for the following reasons:

> *Philosophy can too easily become subjective dogma. Controversy is countered by reason and objectivism.*
>
> *Holding strong beliefs may inhibit learning. Understanding of different beliefs and an ability to encourage debate about them is important.*
>
> *Use common sense and concern for our world.*

One participant marked *strongly disagreed* with the statement arguing that "leaders should be aware of all facts related to the controversial issues, present those facts in an unbiased manner so that others can formulate their own beliefs".

Themes leading to categorisation

Themes emerged from the open comments which verified the majority of positions regarding philosophical beliefs. They were categorised based on 'indigenous codes', meaning they occurred in the text, and included four main categories: theory, belief, knowledge, and leadership as shown in *Table 4.6*.

4.2.2.1 Theory

Comments appeared most frequently when the respondent chose the *'strongly agree'* category expressing their concern for the *theory* or assumptions behind the philosophy. One person noted that "people with strong beliefs in this field can disagree, for example, there is the wise use movement versus the resource managers". The leaders advocated that "these philosophical beliefs need to be based on knowledge, not emotion". They expressed the opinion that "environmental education leaders must stay current and be willing to adapt and change beliefs". Other respondents stated that "strong philosophical beliefs need to be backed up by good theory which is credible", and that "we need an

Table 4.6 Categories of philosophical beliefs of environmental educators.

Meta-category - philosophical beliefs of environmental educators				
Category	**Property**	<-----------Dimensions------------>		
Theory	foundations	past	present	future
	issues	reasoned		controversial
		dealt with		ignored
Belief	source	self-reflection		external motivation
		knowledge firmly held	adapt	emotion change
Knowledge	outside model	science facts environmental science	politics education theory	social issues environmental education
Leadership	approach	dogma	persuasion	advocacy
	style	derived	individual	participatory
		volunteer		professional
		practitioner		academic
		past examples	current practices	new paradigm
	transmission of ideas	cross-discipline		turf battles
	training	constraints opportunity funding		enhancements networks mentoring

awareness of our strong philosophical beliefs and a realisation that 'change' is an essential part of environmental education". However, another respondent cautioned that "some environmental education theorists change beliefs or hold contrary ones to what they state (blow with the wind for prestige purposes)". Additional explanations were given by respondents to describe what they meant by 'the theory behind environmental philosophy'.

> *Western philosophy is one of the things that got us into this mess!*
>
> *Appreciation, stewardship and respect for the environment are essential.*
>
> *We need humility to understand our purpose to guard and protect all life NOT just rise to an economic, political top. Search for truth.*
>
> *Have dedication to the scientific process.*

4.2.2.2 Belief

The concept of *belief* or self-confidence in one's beliefs was singled out because respondents felt it was important for one to be able to apply their philosophy. This is indicated by comments such as "it is impossible to function effectively outside a philosophical framework", "leaders must hold the vision, even when there is controversy about how to achieve the vision". The strength of the leader's philosophical stance is expressed by the statement, "Those beliefs keep you going when things get tough - motivation has to be internal, otherwise the difficulty of doing it would do someone in". Other respondents who marked *Agreed* expressed the idea that "philosophical presuppositions may not meet your objectives" and that leaders must "at least have a strong sense of self and faith in their own judgement".

4.2.2.3 Knowledge

There was recognition of the need for *knowledge* as seen in the comments: "it is probably better to underpin leadership with strong philosophical beliefs, but good environmental education is based on science. This should mean facts based on scientific data should have precedence over philosophical beliefs. Leadership will be stronger where both are in line, particularly as facts are often different". Those respondents who came from a geographical background would add that 'outside knowledge' also includes political nous and understanding the social implications of environmental issues.

4.2.2.4 Leadership

The respondents' comments suggested *leadership* in environmental education can be derived from past examples of conservation leaders, from present involvement with current cross-disciplinary fields, and from an extension to the edge of 'current paradigms'. The career areas of the respondents are reported in this section to emphasise the agreement of the respondents across the fields of environmental education.

> *It seems to be a lifestyle choice to become a leader in environmental education. The dedicated leaders have been 'living and working' environmental education for most of their adult lives - including me.*
>
> *(environmental education centre director)*

> *Note the great conservation/environmental leaders of the past - Thoreau, Muir, Mills, Carson [sic], H. H. Bennet, Darling, Leopold - all, as I see them, humble, unassuming men who were awed by a sense of the wonder in nature. How we need women too, like C! (his younger mentor)* *(state conservation director)*

> *Leaders need to look at successful innovations in other fields and apply them to environmental education. Sometimes the best ideas come from 'the edge' of current paradigms.* *(city government e.e. director)*

Participatory leadership

This cross-section of respondents felt that leadership can come from many sources - volunteers to professionals, practitioners to academics. Shared leadership within a multi-skilled team is preferred over the "disciple and follower" mode since this encourages development of new skills and commitment from all participants. Respondents mentioned that:

> *Leadership should come from everyone not just one individual. It is a role everyone should take some responsibility in. It is a valuable life skill.*
>
> *(resource agency e.e. personnel)*

> *Leadership in environmental education varies between volunteer and professional. Both display a high level of leadership.* *(community organiser)*

> *Leadership is frequently from practitioners rather than academics.* *(private environmental education consultant)*

> *Leadership is important as an initiator of new ideas and programs. Shared leadership is important in implementing programs so all participants can develop new skills.* *(NGO education officer)*

> *It requires commitment.* *(Wildlife Foundation president)*

> *I tend to disagree with the approaches of 'leader with disciples', such as Van Matre. Leaders generally display a very personable and warm relationship with all.*
> *(developer of new school/ community program)*

> *ability to employ at will who you want to achieve with, ability to build a team of consultants. Need to generate cash flow annually, to be multi-skilled to achieve this point.* *(private environmental education editor)*

Transmission of ideas

When environmental leaders educate *for* the environment, they must often deal with issues that require a *transmission of ideas.* Linking their personal philosophical beliefs and their knowledge base appeared vital to this sample of educational leadership. Three participants explained:

> *Individuals have strong philosophical beliefs to begin with and need to learn ways to cope with controversial issues.*

> *Issues are only controversial if they are based on a philosophical belief - then they 'need' to be dealt with.*

> *I agree as long as these beliefs include respect for others regardless of their stance on environmental issues.*

Since these leaders must deal effectively with others in their education role, they wrote that:

> *Confusion with our own feelings towards issues can make our education confusing. Even when we present a balanced approach to issues, we need to be comfortable in our own minds about what are the 'right' attitudes toward issues.*

> *'Environmental education' is a 'red light' to many people, one must know where they stand with e.e. and what their chosen role is in order to face adversity without weakening.*

One respondent felt that a strongly held philosophical stance "helps for all aspects of dealing with others". It was suggested that leaders aim toward "fairness and appreciation for the opposition's point of view with the disposition to bring change and enlist their power and support". Finally, it was stressed that "understanding the true nature of education means honouring access to a range of views. Education is not advocacy".

In summary, the group of leaders responding to the question of philosophical beliefs suggested in their comments that environmental educators should understand and reflect upon their own philosophical orientation to environmental issues and towards education, so that when they act in a leadership role, the attributes of fairness, balance and good judgement will be reflected in their leadership style with the understanding that good environmental eduction is a matter of 'persuasion' and not 'advocacy'. The respondents suggested that holding a strong, personal, philosophical belief is important to leaders in dealing with the controversial issues associated with environmental education if it is not so dogmatic as to preclude necessary changes when new information based on scientific evidence is presented. They felt that philosophies of environmental education should not be based on changing political whims since personal belief underpins one's actions as a leader. It should encourage fair presentation of controversial issues and not strong advocacy of one favoured position.

Leadership may be derived from across a broad spectrum of fields as was noted in the lives of past conservation leaders and is even more true today as shown by the wide array of leadership positions held by the active participants in this research sample. Shared leadership seems to be the preferred style for transmitting of environmental education ideas. Suggestions for enhancing their own professional development through such methods as networking and mentoring are explored in the next section.

4.3 Professional Development in the Field of Environmental Education

In order to understand how leaders view their leadership within the area of environmental education, the survey solicited opinions about the idea of a hierarchy of leadership. If environmental education was seen as hierarchical, then mentoring models like those in business, nursing and education might be useful for professional development. If, however, it was considered non-hierarchical, then informal mentoring might be the best avenue for encouraging leadership.

4.3.1 Leadership hierarchy in environmental education

Respondents were asked to rate their agreement or disagreement with the statement: "Leadership positions in many organisations can be described in a hierarchical pattern, but this is not true in environmental education". The results of forty-nine statistical responses are shown in *Table 4.7.* Two-thirds of the group felt that hierarchy does not exist. Therefore, formal mentoring schemes may be difficult to establish.

Table 4.7 Results of Survey Question 3.2 regarding hierarchy in Environmental Education.

There is not a hierarchy of leadership in environmental education.	N=49/50
Strongly agree	25%
Agree	41%
Neutral	12%
Disagree	20%
Strongly Disagree	2%

4.3.1.1 Explaining their stance toward hierarchy

The open comments under this section explained reasons for the respondents' positions regarding hierarchy. These were categorised as 'enhancements' meaning respondents gave added reasons for their choice or 'limitations' which explained their reservations to support a position fully . The properties and dimensions of these categories are shown in *Table 4.8.*

Table 4.8 Reasons for the answers concerning leadership hierarchy.

Meta-category - leadership hierarchy				
Category	**Property**	**<------------------Dimension----------------->**		
enhancements to answers	leadership style	shared	linked	hierarchical
	participation	Doers		Watchers
limitations to answers	belief	thought		action
	action	participate	administrate	evaluate

Respondents who *strongly agreed* that leadership in environmental education is not hierarchical *enhanced* their responses with added comments referring to leadership style.

> *Anyone, regardless of status or position, can have a major impact on others in this field.*
>
> *The most creative rise to the top.*
>
> *Good environmental education will lead others, no matter who initiates it.*
>
> *The ability to teach or enhance learning is an individual skill not related to status or experience necessarily.*
>
> *There seem to be 'DO'ers' and 'WATCH'ers' and those individuals don't fit into the hierarchical scheme such as boss-employee.*
>
> *Some of the best leaders in e.e. are in the classroom and not in some highly paid position with a fancy title. What a person 'does' makes them a leader to me - not some great title. There seems to be more acceptance and sharing in environmental education.*
>
> *Leaders are necessary in confronting environmental issues. Environmental education requires those influential in changing attitudes in others.*

One respondent summed up a non-hierarchical leadership style quipping, "It seems that most of the leaders are middle aged - 'seasoned' but not 'well-done'". One *limitation* to this strong agreement was stated, "I have come across a few people who like to work in a hierarchical pattern even though they say that isn't the case".

Some respondents who agreed with the statement that leadership is not hierarchical did so on the basis of leadership participation. Some felt that "environmental education is very much still a grass-roots activity. It has relatively little prestige amongst senior education". Another concurred saying, "Environmental education seems often to be grass roots-based. People who care become involved. Performance determines hierarchy". A third person noted that although "many leaders are very much at the grass roots level, hierarchical structure is still evident though. It takes a lot of time and effort to achieve results and affect decision making". Further comments were also offered regarding ways to increase leadership participation.

> *There is room for numerous leaders.*
>
> *The structure administratively should mirror the web of 'interconnected life' and other natural resources it represents. Because ecological/ environmental matters cut across every aspect of life, obviously or unknowingly, a hierarchical leadership structure is an anathema.*
>
> *Many people are willing to share/discuss programs and concerns with no one person feeling superior to the next.*

Other *limitations* to this position are signalled by the comments: "some environmental education groups are run just like hierarchies"; "anyone can have a bright idea, but there is not a formal structure in environmental education". Still others pointed out "the statement is more true in the education field than in non-profit [organisations]" and "with government programs other objectives may be stressed as more important".

Neutral responses were summarised in the statement that "leadership generally lies in people with motivation and initiative - particular issues and the interest or ownership an individual imparts is relative to the level of leadership that person displays".

Those respondents who *disagreed* argued that leadership within environmental education does have an hierarchical structure and gave as their reasons: "most organisations are still structured in traditional hierarchical ways - no matter what the business", "Environmental education is like any other organisation. It can be very competitive", and "most initiatives come from government, ie., are hierarchical, a few from the non-profit organisations". As one respondent claimed, "there is ample evidence of people rising to the level of their incompetence due to hierarchical progression - particularly in government fields". Two statements showed limitations to their disagreement:

> *Leaders in environmental education need to be a leader, but also one who is seen to be a 'doer' as well. A leader in this area needs to be willing to get dirty planting trees, sorting bottles, not just directing traffic.*
>
> *I can place leadership in environmental education in an hierarchy, but it would not parallel an organisational hierarchy. Leadership positions are linked, rather in a network with important feedback from mavericks.*

Those who *Strongly Disagreed* argued that "the statement is too general. There are many facets of environmental education, eg., value formation which should be democratic, but field work needs a leader and organisation".

In summary, over sixty per cent of the respondents agreed that leadership in environmental education is not hierarchical. An 'ideal' environmental education leader appeared to be one who was a seasoned line-working maverick who began at the grass-roots level and, no matter the eventual title or status, effected leadership in the 'hierarchy' of environmental education through shared leadership, networking and perhaps mentoring and thereby became influential in changing attitudes and behaviours.

4.3.1.2 Key attributes for professional development

In order to place the role of mentoring in the career development of environmental education leaders, it was necessary to gain further insight into their views regarding professional development. Professional development may be discussed in terms of personal reflection which involves open, active communication between the inner self (encompassing personal knowledge and world view) and one's social context (comprising public knowledge and professional practice). This self-evaluative dialogue works toward a better understanding of the knowledge, values and practice of one's chosen field of work (Butler, 1992b). One respondent stressed that "all the positives of professional development in environmental education are relevant to all professions" and, therefore, "it needs to address values and political/cultural issues, as well as technical skills". There was some difficulty in defining the specific needs of this broad field.

> *Since environmental education has so many different facets to it (and it still is a difficult field to define!!) - professional development can mean the development of a greater scope of skills and knowledge bases to truly contribute to the overall field.*
>
> *I found it difficult to discriminate between these fields. Perhaps an interest in the outdoors. More contact in environmental situations. Perhaps it is a less academic relationship.*
>
> *Environmental education is a very broad field - it is possible to specialise. However this creates a narrow outlook /preservation of single issues. Development needs to be holistic and integrated.*

Because, as one leader remarked, "environmental/ecological education is eclectic!", professional development needs to enhance the "ability to pull diverse concepts/skills/methodologies together". But she questioned, "do we develop these or are we attracted to environmental education because we have this synthesising ability?" Other respondents' statements regarding the key attributes for professional development in environmental education were assigned to two categories - *philosophy*, and *content* having properties and dimensions as depicted in *Table 4.9* and will be discussed in the following section.

Table 4.9 Key Attributes for Professional Development in Environmental Education.

Meta-category - professional development in environmental education				
Category	**Property**	**<-------------------Dimensions-------------------->**		
Philosophy	personal public	occasional without bias	professional balanced	life-long political nous
Content	issues	specialised		holistic

Philosophical Base for Professional Development in Environmental Education

Personal Needs

For the leaders, professional development in environmental education required a personal philosophical base to underpin environmental actions which span from the occasional to a life-long commitment. Respondents emphasised this in a variety of ways.

> *Professional development in environmental education is dealing with life changes and is constantly facing change and controversy with information provided ... it is more a way of living one's life, where as professional development in other fields is more isolated and hits fewer 'nerves'.*
>
> *It hinges on personal need and beliefs. The more developed you become, the more reactionary and controversial or influential you become.*
> *Possibly less focus on self-aggrandisement ... one doesn't have to be as 'aggressive' (walk over people); environmental education becomes your life.*

Public Presentation

Since *philosophy* extends into the public arena, the leaders thought that, during professional development sessions, issues should be presented without bias, balanced, and from a variety of sources with an emphasis on ethics. According to one leader, it should be "honestly researched facts not emotionally driven information". Another felt that "the environment is not static - research and result sharing are very important". On the other hand, knowing that environmental education has a political aspect, public presentation would require "creativity and politically savvy people-skills".

Content of Professional Development

The *content* presented during professional development sessions was seen as needing a scientific "focus on the environment", but including an essentially "holistic approach to multi-discipline information". One leader suggested discussing a "range of topics: ecology right through to industrialisation/urban issues" or "changing the nature of immediate concern (topic of month/year problem)". Furthermore, the respondents thought that philosophy and content of professional development should be embedded in leadership training.

4.3.2. Perceived Status of Professional Development

One major category called *leadership training* emerged under the topic of professional development for leaders. It had multiple properties with variable dimensions shown in *Table 4.10.*

Table 4.10 The category, properties and dimensions of leadership training.

Meta-category - leadership training within professional development				
Category	**Property**	**<--------------------Dimensions-------------------->**		
Leadership Training	delivery	co-participant	team approach	facilitator
	participant	reflection	construction	emancipation
	needs			
	methods	content	enriched mix	field
	styles	formal group	individual	experience
		constraints		informal
	past	self-motivation		conferences
	current	meetings	networks	kinship
	future			mentoring

Importantly, it is perceived that facilitation styles need to incorporate team approaches allowing participants to construct their own ideas about leadership and have time for reflection. These methods of delivery can involve formal or informal groups and take place at conferences or even in the field. They could result in emancipating the participants to become more effective leader of environmental education.

4.3.2.1 In the past - keeping abreast of the field

If key attributes of professional development for leaders in environmental education included a self-reflective philosophy, an updated content base and continued training in leadership skills, then an understanding of how respondents had accomplished this in the past was needed. They listed ways in which they kept current with ideas in the field and *Table 4.11* shows their ranked preferences for various methods. It is important to note that although sixty-four percent did mark 'mentoring or being mentored', it was ranked nine out of ten. Perhaps, this was an area which was either rarely used, was only informal or was simply unacknowledged. Understanding how mentoring fits into professional development for leaders was an important part of this study.

Table 4.11 Methods of keeping current in environmental education.

Method	Very Important or Important
Interaction with professional	98%
Environmental education workshops	92%
Time for personal reflection	88%
Journal articles	82%
Seminar on critical issues in e.e.	82%
attendance at e.e. conferences	78%
environmental science background	68%
training to lead workshops/seminar	68%
Mentoring or being mentored	**64%**
Attendance at new e.e. outdoor settings	58%

Constraints for Leadership Training

As in most fields, constraints to *leadership training* were mentioned which included the lack of opportunity and funding support to attend seminars, especially in rural areas. These professional meetings could enhance leadership through the further understanding of what environmental education might entail across interdisciplinary fields. However, these missed opportunities were seen as barriers for environmental scientists to 'educate' and for environmental educators to teach 'science'. Most importantly, respondents were keenly aware of 'turf' battles and the need to cooperate at top levels. Participants from various orientations offered their comments on this issues.

> *We have not made any distinction between a) educating people about the environment and b) educating people about environmental education.*
>
> *(administrator natural resource agency)*

> *Gaining the necessary experience to be a leader is extremely difficult, as there are very few seminars available. The Department of Education offers very little and their support to attend the available ones is poor. Knowledge seems to be gained in our own time and at our own expense.* *(primary teacher)*

> *I would like to see more of the leaders in e.e. working together and quit the turf battles. Aren't we all working for the same goal - educating teachers and kids about how to live lightly on this planet? Many times it doesn't feel like it. There is not any one environmental education resource that is going to meet the need of all educators or students. The number of programs is not the problem, it's the lack of cooperation at top levels.*
>
> *(director of a national curriculum project)*

Another constraint was that there are "few opportunities for group development or sharing experience. Disappointingly, within the education departments, these opportunities were felt to be "nearly non-existent". Another comment reinforced this position stating, "actually, very few national business organisations have environmental education professional development courses". The lack of opportunity was not seen as insurmountable by leaders who asserted that self-motivation was important.

> *Often self-initiation is only the form of professional development, ie. academic study.*
>
> *At this point in time, I would have to suggest that the greatest attribute here is self-motivation.*

For those who did persevere with professional development in environmental education, it was recorded that "it has created a network of 'kin' throughout the state - some of them becoming very good friends". Others thought that even with the help of networks, continuous personal improvement was necessary.

> *It requires continuous updating of background knowledge and continued striving for improvement in community skills.*
>
> *The emphasis must be on long-term consequences.*
>
> *I don't think you ever 'get there' - there's always room for learning more due to the 'uphill battle' nature of environmental science/education.*

4.3.2.2 For the present - current stage of development

Using paired words to describe feelings about their current professional development in environmental education, the respondents marked their preferences on a continuum. The results shown in *Table 4.12* suggest

Table 4.12 Leader's self-rating of their current stage of professional development.

Attribute	**<-------------------Mid-Range------------------->**			**Attribute**
Confident	**46%**	30%	24%	Rethinking
Unsure	4%	18%	**78%**	**Sure**
Content	13%	26%	**61%**	**Reflective**
Satisfied	**59%**	30%	11%	Dissatisfied
Defined	7%	17%	**76%**	**Exploring**

that the majority of leaders feel confident, sure but reflective, satisfied and still exploring. Knowledge about the leaders' current status of professional development was important to this study as it could help in understanding their receptiveness of being mentored or becoming a mentor.

Open comments allowed the respondent to choose freely other words to describe their professional development thereby enriching the description. These descriptors included a sense of isolation which for some meant being "in a tertiary institution", for others being 'unrecognised', 'sidelined' and 'frustrated'. But most comments had positive connotations of expanding, changing, growing, unfolding, and still evolving. They saw the need to "expand my role," and be "open to new ideas and new perspectives". Their words suggested actions such as being 'a rebel' or 'unconventional' and becoming 'invigorating' and 'hopeful'. These attributes are summarised in *Table 4.13.*

Table 4.13 Additional self-descriptions of current professional development.

Meta-category - current professional development of leaders				
Category	**Property**	**<--------------Dimensions-------------->**		
isolation	aloneness	scared	side-lined	unrecognised
expansion	development	learning	unfolding	evolving
	role	new ideas	redefining	new perspective
action	perception	assertive	unconventional	rebel
	methods	partner	integrative	clearinghouse
	results	busy	mobile	dedicated
	effects	experienced	adviser	personal ease

One person mentioned not being "trained in environmental education, but experienced in community education" and another explained that "with the exception of very few courses long after I graduated, I had no formal environmental education training". Despite lack of formal training for this varied field, other leaders described their current professional status as including work with partners, integrative work with networks and 'being a clearinghouse'. These roles resulted in busy and dedicated lives which involved travelling. The consequences of having been professionally developed over the years led to being "an honorary adviser," and, importantly, for one person "at ease with my own knowledge".

4.3.2.3 Toward the future - mentoring as part of professional development

Improvement in professional development was seen to "rely heavily on facilitatory capacity" during workshops and it was recommended using a variety of people to provide an understanding of content coupled with the "opportunities to present in a safe environment". A 'participant-centred' session would give professionals a chance to be reflective - "a time to be still and listen". According to respondent statements, workshops and seminars should be "constructivist, built on participant's practice", "democratic, interactive and creative", "leading towards an emancipation" that will foster "committed action".

Several respondents cited "field experience with content" as important; one person gave the reasons for this 'enriched mix' as:

> *Professional development in environmental education needs to have lots of out-of-class experiences, best if many concepts are not learned out of a book.*

Professional development was seen as requiring "systems thinkers, not linear thinkers" and "continuous updating of background knowledge and continued striving for improvement in community skills". According to the leaders, professional development was highly valued as a means of strengthening the leader's personal philosophical base. They felt that this proved necessary for dealing with the constant change and controversy of environmental information. The need for self-motivation was noted to overcome the lack of opportunity for professional development. For many, becoming aware of the political nous necessary to deal with the political aspects of environmental education was important, but others preferred an unbiased approach giving a balance to the awareness and ignorance of environmental issues.

Most respondents indicated the need for a facilitative format during training allowing them time for reflection, construction of knowledge, and emancipation toward the 'uphill' nature of environmental education, ie, dealing with the controversial nature of environmental education issues. Although most agreed on needing further scientific content, one leader summarised the need for enhanced professional development in this field.

> *Much, much more must be done to recruit and train future environmental conservation educators in language arts (English and all foreign languages taught), the arts, music, social science, mathematics, etc. from a base in ecology and general science. Somehow history and social sciences need to gain as a base the philosophy of ecology, for no environmental decision is ever made without political, economic or social reasons.*

Although the leaders have understood the constraints regarding professional development, they were willing to overcome those obstacles through personal striving. In the past leaders have kept current in environmental education by interacting with professionals, attending workshops and taking time for reflection. Currently, they are basically satisfied with their careers, but still exploring possibilities to enhance their leadership, overcome their sense of isolation and be open to new perspectives.

It was found that some of these respondents were at the stage where they had benefited from informal mentoring in a field they mostly regarded as non-hierarchical and some were at the point where they would consider offering this method of professional development to others. One respondent stated, professional development can be seen as "highly individualised mentoring for the learner". If a mentoring relationship were the key to forming, developing, or refining a leader's philosophical beliefs and providing them with an effective avenue of professional development, the importance of this experience needed to be substantiated. Data presented in the next sections focuses on the survey respondents' understanding of mentoring.

4.4 A General Sense of Mentoring

It was not known at the beginning of the study how many leaders would recognise the concept of mentoring. Therefore, in the introduction to the survey, leaders were given only a brief definition of the term mentor as "a guide in life who provides information, support, and feedback on personal and professional levels" (Segerman-Peck, 1991).

4.4.1 Definition of a mentor

To ascertain a more complete understanding of mentoring and how it might specifically relate to environmental education, all respondents were asked to answer the following questions:

> Using short phrases, please explain what you mean by mentoring.
>
> Please list key attributes which might *distinguish* a mentor in environmental education from a mentor in other areas.
>
> Please provide any other comments about mentoring in environmental education.

The responses showed a range of general definitions for a mentor.

> *A mentor is an individual who guides, educates and develops the talents of another.*
>
> *By precept and example, one serves as a mentor.*
>
> *a guide to demonstrate the most effective ways of 'doing', thinking, skills, philosophy and techniques.*
>
> *Mentors are people who provide the background information and experience needed for young people in order [for them] to form ideas, concepts, self-respect and personal values.*
>
> *someone who shares ideas/passions of conviction with you.*

> *one who shows willingness to discuss, defend and question actions, practices, values and beliefs.*

These comments suggest that mentors and mentorees could set up relationships which would have a beneficial impact on the mentorees. They were described as "people who provide a 'role model' and are capable of positive criticisms" and have an ability to 'coach' even if not an expert.

One aspect of the relationship is a shared knowledge base where the mentor could provide expertise in a field of common interest.

> *someone who has considerable expertise in an area and who passes on that expertise to a colleague; someone who encourages people to expand their own knowledge, skills in an area and helps to increase their network of contacts.*
>
> *playing an advisory and educational role in assisting the development of another in a field of common interest.*
>
> *someone who inspires one to grow personally and professionally; someone who has and is willing to share knowledge.*

4.4.2 Characteristics of the mentor

According to the respondents, certain characteristics were needed to become a mentor. Knowledge needed to be "a broad-based knowledge of the subject and not necessarily academic training" and a "round knowledge of the subject". Personal ethics included "being a good example to follow" and "feeling strongly about the issues".

Some respondents described effective leadership skills needed by a mentor. They should foster a "cooperative system, not 'expert' imposition", use "more questioning than pontificating" and not have "hidden agendas, for example, financial goals". When fostering awareness, mentors should encourage involvement, share experiences and "provide examples of successful projects they have done". Other 'personal skills' which are compatible with the list generated by Segerman-Peck (1991) were listed as:

- a good listener
- personal skills of knowledge and communication
- flexibility
- educational
- provides ideas
- has charisma
- advisory
- genuine interest in other people
- skill builder
- moral support
- interesting
- gives encouragement
- respects others
- being respected as a scientist and person
- vital
- inspirational
- motivating
- is genuine, trustworthy

Several respondents pointed out the need for sensitivity stating that mentors should "model sensitive behaviour" and show "empathy with the learning process", have "an understanding of the 'students' reality and context", yet, "pique interest in young people".

The leaders offered suggestion on what to look for when choosing a mentor.

> *finding someone who does it the way you want to do it.*
> *It could be copying the way people do it, not doing that*
> *way, picking the eyes out of something-someone.*
>
> *finding a person whose leadership qualities you admire*
>
> *someone who sparks your interest in a topic or ideas*
>
> *someone you aspire to follow*
>
> *trust and respect for the mentor*
>
> *high regard for the mentor as a person and professional.*

4.4.3 The mentoring relationship

Respondents gave their opinions about the initial contact which must be made in order to begin a mentoring relationship.

> *someone who remembers you and what you are doing*
>
> *ability to recognise creativity, innovative thinking, new perspectives*
>
> *being seen as approachable and available*
>
> *having someone or several persons pay special attention and take time to be with you and care about your development.*

In order for the relationship to develop, personal dimensions such as guidance and encouragement were cited.

> *a person who provides guidance to another that enhances development*
>
> *encouraging others to form problems and provide solutions*
>
> *helping to achieve full potential*
>
> *guidance in the forming of action steps.*

During a developmental stage of a relationship, a mentor would be able to help the mentoree "focus views and understanding" and provide feedback, especially if it was non-judgemental.

> *someone to check out ideas without fear*
>
> *provides opportunities for building self-confidence and constructive criticism*
>
> *provides valuable critique, feedback and specific techniques, behaviour actions to improve*
>
> *letting you experience failure, but offering creative criticism - not judgemental*

> *the ability to listen to problems/concerns and provide feedback*
>
> *be supportive and non judgemental*
>
> *permission to experiment and fail*
>
> *providing a sounding board.*

Professionally, the mentor could help by "giving assistance about whom to contact or where to go for further information", "provide opportunities to experience new programs/settings" and "suggest alternative ways of presenting materials". There was also a sense of colleagiality in the respondents' statements.

> *I would consider my 'mentors' to be more colleagues and associates who share similar aims of innovation. People with whom I share ideas, resources, evaluate projects, and cooperatively plan.*
>
> *a reciprocal, purposeful relationship*
>
> *being a partner in a learning process*
>
> *Mentoring could be a way of doing things or be a procedure for a team effort, as in publishing.*

The general sense of mentoring was similar for leaders from both the USA and Australia. Their views can be summarised by a female, wildlife biologist.

> *Mentoring has been the inspiration through words and example that another person has given me. A guidance with room for me to pick and choose what is 'right' for me. A support for my goals and dreams. Someone to talk with about my beliefs. Someone who believes in me and respects me.*

This view summarises a relationship built on a shared philosophical base which looks at values and can lead to environmental education action.

4.5 Distinguishing Mentoring for Environmental Educators

Over sixty percent of the sample of leaders were of the opinion that mentoring was an important way to keep up in the field of environmental education. However, they also expressed the view that there was little organisational hierarchy within environmental education making formal mentoring schemes, like those present in business, nursing and education, problematic. Therefore, it is important to this study to see if the leaders responding to the survey questionnaire would distinguish mentoring needs for environmental education from their general ideas on the phenomenon of mentoring. The following quotes have been chosen by the researcher because they are germane to clarifying this difference.

4.5.1 Background for environmental education mentors

Two respondents described a mentor specifically for environmental education.

> *[A mentor is] someone who 'inspires' others to action for the betterment of the environment. The passing on from one person to another the awareness and enthusiasm to try to solve environmental problems.*
>
> *One who has achieved in the environmental education area with respect to new developments, ie., has applied both theoretical and practical skills to real life situations and achieved a change!*

Respondents stated that the mentor's background should be comprised of "an educational background - biology generally" or "experience in a variety of disciplines - education, environmental science, environmental issues" needing "diverse experience, skills and knowledge in environmental education." with " a thorough knowledge of theory and practice in environmental education" and "active involvement in environmental programs". One could gain this background from a variety of orientations.

> *Because of the diversity of the field of environmental education, mentors may come from a variety of orientations.*
>
> *Mentors are traditionally from the same areas as the mentee, but the interdisciplinary nature of environmental education makes it possible for a mentor to be from a different field.*
>
> *[They may come] from a wide variety of backgrounds, for example, field centres, public/natural parks, government departments, schools, academics, industry.*

Another issue was that mentors should have local "knowledge of the area" and "awareness of environmental challenges'. But they needed a global view in order to "address not only local, but broad-based issues", have "a broad view of non-formal work options", keep up "involvement in other environmental groups and have constant communication" and show "an understanding of the political versus 'green' balance".

4.5.2 Characteristics of environmental education mentors

According to the comments, potential mentors need to show a 'personal ethic' and have "natural interest and passion about the environment". They were described as someone whose "sources of recreation (entertainment/release) were usually found in natural settings" or "someone who has spent a lot of time in the out-of-doors".

> *Environmental education people are highly accountable for their actions, have a huge responsibility and can have an effect on the future of the world.*
>
> *We deal with ethics, political beliefs and learnings, and values to do with the environment.*
>
> *primarily compassionate people more concerned with creating a better world for children and future generations (ie. not just a job)*
>
> *To be a mentor, your student or subjects must have a desire and interest in natural resources.*

The respondents felt that mentors should show "devotion to the field" and their lifestyle should demonstrate a "commitment to the natural world and to children", "a true love and dedication to the conservation of the environment" and "an intellectual and philosophical commitment to the area, not merely an emotional one". Opinions were expressed that this internal motivation is generally "spiritual as well as mental" and could be seen as "a 'whole life' way of living - personal values that affect choices in lifestyles daily" and one that is "not primarily concerned with financial gain". The mentor should "model appropriate practices in/about/for the environment" and "live the kind of environmentally sound lifestyle that is a model for others".

Thinking about other personal attributes for the environmental education mentor, one female academic commented, "I keep reflecting on the passion for a topic and the enthusiasm exhibited". This was balanced by others' views regarding the practical skills needed by the mentor.

> *Mentors in my own area possess levels of skills in a varying degree on outdoor pursuits, skills and recreation sometimes involving risk, danger and adventure.*
>
> *one who takes a person outside to learn how the living world works*
>
> *Be willing to leave the classroom and provide the support and structure to ensure success.*

The leadership style discerned for a mentor in environmental education included being able to:

> *provide reasons why the environment should be managed and conserve;*
>
> *see and understand relationships;*
>
> *practice what is preached;*
>
> *inspire others to work for change;*

use flexible approaches and actions that can be totally reversed if new well-founded scientific evidence warrants it;

provide hands-on experiences for learning and/or sharing ideas; and

encourage activities designed to investigate environmental problems at (a) the research level and (b) political level.

4.5.3 Describing the mentoring process

The mentoring process had been well studied through the years (Levinson *et al.*, 1978; Kram, 1983; Caldwell and Carter, 1993), but it had not been described in environmental education. One leader offered an opinion on this practice noting that "mentoring in environmental education must be compatible with the philosophy and values of environmental education. It must be democratic, collaborative and non-impositional". Survey question 4.3 asked the respondents to rate their opinion about this process using paired adjectives. The five point scale has been collapsed into three parts as shown in *Table 4.14.*

Table 4.14 The results of survey question 4.3 showing the leaders' opinions on the process of a mentoring relationship.

Attribute	<-----------	Midpoint	----------->	Attribute
Accidental	23%	26%	**51%**	**Intentional**
Informal	**56%**	26%	19%	Formal
Useless	7%	2%	**91%**	**Useful**
Unplanned	24%	36%	**40%**	**Planned**
Discouraging	2%	0%	**98%**	**Encouraging**
Short-term	9%	4%	**87%**	**Long-lasting**
Personal	**98%**	0%	2%	Impersonal
Professional	**41%**	33%	26%	Social

The leaders indicated that they preferred mentoring in environmental education to be intentional and informal, useful and encouraging, long-lasting and be both personal and professional. Considering the previously established view that leaders felt environmental education was not hierarchical, it is interesting that forty percent feel that the mentoring should be planned. How one can 'plan' for mentoring in an informal setting was a question which was probed in more detail during the leaders' interviews and is reported in Section 6.5.2.

Open comments under this section produced further understanding of a mentoring relationship. One respondent who had trouble deciding between two of the paired words reasoned, "I believe one can be professional and social at the same time. I try."

Some felt that mentoring was an mutual arrangement. For example, "the relationship is on a personal basis and both parties are aware that the relationship exists, both parties have consented to the relationship". However, several comments suggested that mentoring was not easily available. They stated that "very little mentoring had taken place", was "often non-existent" and that one would "have to use his/her own initiative" but that it would be "very helpful if available" especially for "overcoming the tall poppy syndrome and becoming an ironbark" (Mitchell, 1988).

Not all respondents thought that mentoring was intentional.

> *A mentor is someone who assists another, whether intentionally or unintentionally, to gain knowledge and/or skills with respect to a particular subject.*
>
> *I think many mentors for environmental education are not in high positions and the process, therefore, is not real formal. Many times there is some personal friendship that is developed that enhances and may even accelerate the mentorship.*
>
> *Much depends on the personality of the associate. If he/she is a quiet person it may be necessary for the mentor to be pro-active, requiring some planning and formality. The more dynamic person may only require responses.*

> *I think some people will just 'click'. My mentors probably didn't even know that they were - we are simply long-lasting social and professional friends. It wasn't planned; it just happened.*
>
> *My personal mentors probably never knew how much they influenced me.*

It is this very sense of unacknowledged mentoring that needed to be explored in the interviews if the process of mentoring was going to become intentional as fifty-one percent of the leaders thought it should.

The comments presented in the above section showed that leaders have understandings of the general concept of mentoring which are similar to those discussed in Chapter Two Section 2.3. In addition, they offered some specific ideas regarding what would make an effective mentor for environmental education and these were akin to the ideas discussed in Section 2.3.6. Mentoring was seen as important not only for young people interested in environmental education, but as one respondent stressed, "adults need to mentor other adults".

4.5.4 Willingness to participate in a mentoring relationship

The next set of questions probed the willingness of these leaders to take part in a mentoring relationship. They were asked to respond to three questions, as well as to provide further comments on the issue.

> At this stage of your professional development would you consider becoming a mentor for someone in the field of environmental education? Please explain.
>
> If you are or were to become a mentor for someone in environmental education, please describe the benefits you would envisage for yourself.
>
> If you were to become a mentor for someone in environmental education, please describe the benefits for the other person.

Several responses to becoming a mentor were negative with the leaders citing reasons such as not being in the right position, not having sufficient contact, other responsibilities and career changes.

> *Being retired, it would be difficult. My heart would support the idea, but my head would suggest it is impractical. Exciting arrangements are, however, still in place.*
>
> *I am not in a position to do it (I live outside the city/town).*
>
> *No, I feel overwhelmed with my career change and consulting.*
>
> *I am not yet in a stable professional position.*

One person said *no* for philosophical reasons: "I am contemplating a change in how I educate others". Others objected to planned mentoring stating, "not in any formal sense" and "I would not intentionally be a mentor".

Some respondents expressed the idea that they were not quite ready to take on mentoring responsibilities citing insufficient time due to work and study commitments or that they still needed a firmer foundation for themselves.

> *I am confident in what I know and think, but there is a long way to go. I need to read a lot more and test my ideas.*
>
> *I have played the role slightly for other teachers in my district. However, I don't feel my experience of expertise (or lack of) has developed to the point I feel I could be so largely responsible for someone else. I am still in awe of the knowledge and contributions of many of my peers.*

Another had already been a mentor and confirmed that, "I would be willing to take on such a role because from past experience as a mentor I have enjoyed it". Others felt that they were continuing in that role with young people, colleagues and others.

> *In a sense, teaching at (tertiary institution) is a mentoring process.*

> *I am regularly one for undergraduate and graduate students and younger colleagues.*
>
> *I feel I mentor young adults on a continuous basis.*
>
> *Yes, in the area of public participation and involvement, I already partly play this role with regional staff.*
>
> *I am for several teachers or have been.*
>
> *I have been in that position for some years and still am doing it.*

For those who contemplated taking on this new role, they would do so, but with some reservations.

> *I don't believe my knowledge is great enough to mentor someone with some experience in the environmental field. For younger students, possibly.*
>
> *[It would be] the pleasure of working with a person of similar interests, probably someone younger.*
>
> *I would act as a mentor to someone new to environmental education if they so requested, but just upon an existing friendship preferably.*

The leaders discussed their willingness to become mentors but described certain conditions for establishing a relationship which included having mutual selection, accepting the limitations of the mentor and acknowledging time constraints.

> *Perhaps, however, the person would have to be one who would like me to be their mentor and with whom I would find a joy.*
>
> *based on appreciation and respect*
>
> *only if someone selects you*
>
> *provided I believed I was able to give genuine assistance*

> *when I can be of assistance to help and show by example for another person in the same field who can learn and be inspired*
>
> *Yes, (within my limitations) if it helped someone sort out their objectives and feelings.*
>
> *Yes, from the soil conservation and natural resource use and management perspective.*
>
> *If someone wants me to help, I would be very willing if the time frame could be worked out.*

Those who were quite receptive to the idea of mentoring, described it as an opportunity to share knowledge and continue their own learning.

> *Sharing what I have had to learn the hard way would be one way to contribute to the development of environmental education.*
>
> *I have the confidence to be a mentor and share knowledge. Also the wisdom not to be arrogant; also the capacity to learn as well as assist learning.*
>
> *I believe I have experienced and learned many things that I think could be helpful to someone else. I am also open to learning from others as well.*

A former director of an environmental education centre spoke of training mentors: "In fact this is where I hope to go with my doctoral work. I would like to train mentors of prospective K-12 teachers in philosophies and practice of environmental education".

The comments from the respondents illustrated that many of them understand what is entailed in starting a mentoring relationship, such as needing a time commitment, sharing of information, debating philosophical approaches, and offering opportunities. Many of the leaders were willing to take on this responsibility, but felt that the benefits would need to be mutual for both parties.

4.5.5 Benefits for the mentor

The leaders felt that mentoring would benefit themselves in many ways specifically by helping them clarify their own beliefs and attitudes while furthering the goals of environmental education.

> *[Mentoring] helps clarify your personal beliefs, attitudes. You need to identify personal practices and knowledge base. It necessitates an understanding of the theories underpinning your actions, sharing of thoughts, philosophies, personal values.*

> *feeling of purpose in my contribution to further advancing the need and value for environmental education in business, industry and education*

> *adding more nourished, good people to a world who needs more thoughtful focus, willing and supported to make informed actions.*

4.5.5.1 Intrinsic reasons for becoming a mentor

Certain intrinsic rewards were noted such as contributing to the feeling of self-worth, reducing loneliness, renewal of goals and personal enjoyment.

> *It would give me an opportunity to learn as well when I watched the progressive stages of the person's professional growth.*

> *I would enjoy the company and feel of value and worth.*

> *self-confidence, reassurance of my own work*

> *Aldo Leopold characterised having an ecological education as 'living alone in a world of wounds'. I would enjoy the company.*

> *someone for me to talk to (they could mentor me too)*

> *I like leveraging my time and resources with/through another person.*

> *social and professional enjoyment of working with another person with similar interests*
>
> *My personal mission of infusing e.e. into public schools might be addressed - perhaps actualised.*
>
> *enhanced accomplishment of goals by enlisting co-workers, gaining insights into new approaches.*

If they did become mentors, the leaders felt that they would not only experience a sense of satisfaction, rejuvenation, worthiness, an 'inner glow' and personal joy, but that these emotional ties would extend to mentorees as well.

> *satisfaction in extending the 'fight' for the environment*
>
> *satisfaction in watching someone else achieve*
>
> *warm feeling about achievements of associates*
>
> *the good feeling of helping save the world*
>
> *regeneration of enthusiasm*
>
> *motivating and rejuvenating.*

Respondents suggested that the mentor could accrue a sense of worthiness because beliefs would be challenged, ideals expanded through feedback and reflection undertaken which would lead to a clarification of values.

> *Developing within myself that I have done something that is worthy of being mentored.*
>
> *the knowledge that I had - programs/ideas worthy of being share*
>
> *someone who can review and challenge any ideas and jointly work through them*
>
> *gives an opportunity to challenge my beliefs*
>
> *exposure to different (other) viewpoints*

> *expanded philosophical base*
>
> *increase my world view, expand it*
>
> *opportunity to get feedback*
>
> *the opportunity to evaluate my /ideas while sharing them*
>
> *clarification of values, attitudes, ideas, personal beliefs*
>
> *helps me to clarify my own and then be able to communicate them, reflect and rationalise.*

4.5.5.2 Extrinsic benefits for being a mentor

Other remarks implied that becoming a mentor would provide extrinsic rewards such as opportunities to learn new information, revising knowledge, testing ideas, honing skills, gaining insights into new approaches, allowing for a chance to share, discuss, debate, improving communication skills and practice leadership styles.

> *forces one to keep up-to-date with current ideas and literature*
>
> *I think anytime you have a student teacher, there is a great deal of analysis of techniques. Therefore, a benefit is to hone your own skills.*
>
> *apply what I'm thinking about with another in a different situation*
>
> *opportunity to try new processes, discover new insights*
>
> *great satisfaction in team-building; motivating teachers to utilise integrated environmental education.*

A mentoring relationship involves a certain level of socialisation. One respondent expressed a "feeling of kinship for the learners and mentoring them to grow as one's own children". Another remarked that "The reward would be in the quality of the individual - one who had a love for learning, a sense of wonder, a humility for what is unknown to the 'intern' and for what is unknown to all of us, satisfied with intrinsic rather than seeking extrinsic reward, but above all a reverence for life". Several respondents mentioned learning with the learner and that "we usually teach best what we most need to learn".

Other extrinsic benefits include: "gaining from their [mentoree] knowledge and youthful enthusiasm", increasing the mentor's own network by creating new networks of people and having access to new information bases.

A number of respondents emphasised a sense of 'passing on the torch' or creating a 'cascade of influence'.

> *I am and will continue to mentor it's on going and cyclic. I still have my mentors and I mentor others and even the ones I mentor often re-mentor me.*
>
> *Mentorship demands greater clarification of one' own beliefs/ practices. If one is committed to the goals of environmental education, this is the obvious way to 'pass on the torch'.*
>
> *There is a chain: ability to pass on what others have given me.*
>
> *I am challenged to reflect and crystallise my knowledge and skills in order to pass them on.*
>
> *an opportunity to allow others to 'spread the message'*
>
> *the feeling of sharing and passing on some of my experiences - good or bad*
>
> *passing on what I care about and have found crucial to existence*
>
> *I would feel like I was helping 'the cause', helping to further environmental education.*

In summary, comments from the respondents delineated both intrinsic and extrinsic rewards for an environmental education leader who becomes a mentor. These benefits are highlighted in three synoptic comments.

> *I enjoy trying new ideas, sharing learning experiences. Hopefully I also see benefits - working towards achievement of the goals of environmental education within education by assisting in the professional development of other educators.*
>
> *It would be an affirmation for the value of my experiences. It would be an opportunity for a sharing and gathering of information. It would be rewarding to enable another person to 'take flight' into their own personal dream and development. It would again broaden my circle of contacts and network.*
>
> *The future of the planet is really important to me and I feel I'm helping the planet when I empower others to take action on behalf of the environment.*

4.5.6 Benefits for the mentoree

Leaders were asked to explain what they felt would be benefits for a mentoree in environmental education. Comments such as "increased skills, self-esteem, sense of power, sense of control over their own life and environment, new views of the world", can be categorised into two groupings personal and professional benefits.

4.5.6.1 Personal gains for the mentoree

One mentor felt that she could be "a bouncing or a springboard of ideas for the mentoree". Other potential mentors described their various abilities saying, "I am flexible and a dreamer, enthusiastic and innovative", " I could give some practical advice - the benefit of my varied background - a good listener".

The mentorees could receive personalised help which is "supportive, non-authoritarian" and could result in "learning from my mistakes and successes" and 'pick up encouragement when facing difficulties". If the mentor was "someone who genuinely cares or is interested" and the mentoree is seen as "a kindred spirit" a friendship might evolve giving a

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"satisfaction from building rapport and learning/accessing new opportunities". As they become exposed to the mentor's knowledge and tap into their experience, self-confidence could be increased and, according to one respondent, the mentoree would:

> *be given opportunities to succeed or fail and through that to learn about themselves and gain confidence.*

The personal stimulation of working with a mentor can present challenges to the mentoree which can cause alteration in attitudes, beliefs and values. The relationship might widen their vision and cause a sense of social awakening as exemplified by the following quotations.

> *growing in attitude and knowledge and appreciation*
>
> *a view of the environment which takes many points of view into consideration*
>
> *opportunity to challenge their beliefs*
>
> *One is limited only by one's energy and enlightenment.*
>
> *opportunities for a wider vision of environmental education*
>
> *Expand their horizons to include development issues, economic and cultural values in their work.*
>
> *Perhaps the person might gain a sense of social awakening and environmental education's need to permeate other disciplines - and perhaps to a world wide view.*

The results of this interaction between mentor and mentoree can be a "personal growth in intellectual empowerment and ethical terms". However, mentorees were advised to "accept the thoughts of others and weigh against your own. Always listen, you cannot learn, if you are talking".

4.5.6.2 Professional advantages for the mentoree

Beside having a "general model to follow" which can reveal "ways of operating" in the field of environmental education, respondents suggested that mentorees would gain other professional benefits such as increased networking, accessing experience and sharing resources.

> *increased opportunities for networking and expansion of professional associates, support, encouragement, guidance and friendship.*

> *I have many contacts to share from local to national - even a few international people.*

> *opportunities to access experience*

> *Well for one thing, the right person would walk away with my library - I must find the right person to whom to give my collection.*

With "accessibility to a person with experience and proven skills", the mentoree could learn leadership styles from the mentors such as "a style of presentation that is successful" and "some assistance in ways of communicating". The mentoree could:

> *share in the 'real' role of tackling school/community environmental education, ie., practical logistics devoid of philosophical generalisations.*

They would "gain someone who will take an interest in their project" and "benefit from [the mentor's] experience as a participant and leader in environmental education". This could lead to a "transfer of enthusiasm and knowledge where applicable and experience in the educational field" by being shown "successful examples of environmental education programs" and thereby "growing in their own effectiveness.

Leaders suggested that it is important for mentorees to gain organisational 'know-how'. Mentors could be of help by removing political barriers and suggesting problem solving techniques which could save the mentoree time.

> *increased knowledge of the bureaucratic system and barrier to good environmental education*
>
> *(education department)*

> *I would help them to know how important it is to work within the system with respect for the system.*
> *(community person)*
>
> *help them 'break into' a very expanding field*
>
> *ideas of how to work through the problems of environmental education in the frame of public education*
>
> *They would learn to be a good administrator.*
> *(extension officer)*
>
> *opportunity to save time by needless repetition of old studies*
>
> *They [mentors] are able to explain much of the groundwork, thereby, saving time and energy for others.*
>
> *I have learned from my experiences, so I would have much to share without 'reinventing the wheel'.*
>
> *An important part of my mentoring was being opened up to the networking and being given opportunities outside my regular job.*

Along with this political nous, the mentoree could gain the "opportunity to become a systems thinker, to learn divergent thinking and problem solving skills", develop "responsible decision making in choosing programs that work", grow professionally through a "partnership to explore new ideas and processes", and ultimately receive the "encouragement to explore a variety of career opportunities".

4.5.7 Effects of a mentoring relationships

Beneficial effects of the mentoring relationships were identified in the data from Question 4.4 on the survey. It listed three groups of characteristics - personal, professional and organisational - which had been identified through the literature search as important to people who had been mentored (Roche, 1979; Kram, 1983; Segerman-Peck, 1991). The leaders were asked to rank the importance of items within each group. Forty-four respondents (eighty-eight percent) chose to answer this question and their internal rankings for the items within the groups are shown in *Table 4.15.*

Table 4.15 The ranking of the beneficial effects of mentoring for environmental educators.

Rank	Personal Matters	Professional Matters	Expanding Opportunity
1	changed my beliefs	increased my power base	provided travel opportunities in relationship to my career
2	concerned with my personal matters	allowed me leeway to make mistakes	removed barriers with employers to allow new opportunities
3	transformed my view of the world	concerned with my career progress	opened opportunities to work outside my normal job
4	was available for consultation	showed me organisational roles	increased my access to resources
5	improved my self-confidence	introduced me to a new network	introduced me to a wider network
6	helped formulate my attitudes	provided expanded opportunities	delegated more responsibility to me

The respondents were also asked to prioritise the three groups and fifty-two percent marked 'personal matters' the highest. Second in importance were 'professional matters', while the group describing 'expanding opportunities' was the third choice.

The benefits of mentoring were seen as important enough to be passed on to new mentorees especially in its potential to affect environmental education.

> *development of the potential to mentor others*
>
> *satisfaction of working for future generations"*
>
> *increase their ability to make meaningful contributions and changes in the world*

> *opportunity to teach about making decision for the 7th generation*
>
> *guide new employees with plans for their career and for involvement in environmental education.*

Mentoring can be seen as vital to the career development of quality environmental educators. Its influence and importance for professional training and personal satisfaction is summarised in the following comments:

> *Perhaps it's the mentor relationships that are the heart of great teaching and performing. Great artists and musicians so frequently attribute their success to their 'mentors'. Therefore, mentors in this most vital dedication to all life and matter are greatly needed.*
>
> *I believe that mentoring and job-related experiences are the most effective and efficient methods of training of quality environmental educators. Unfortunately, the job of intern, apprentice or trainee is so underpaid.*
>
> *Mentoring was perhaps most important in assisting me in formulating my career choices as I learn most effectively and enthusiastically from 'the experts' who are willing to share their success and failures and who can 'lead' in a democratic way allowing me to make my choices based on that which I gained from them.*

4.6 Synopsis of the Meanings of Mentoring as Related to Environmental Education

Overall, mentoring was seen as being "helpful, worthwhile and comfortable in order to be successful". What is important to this study is that leaders were able to distinguish characteristics for a mentor in environmental education from those in other fields. Three respondents offered summary comments concerning the special characteristics, function and role that an environmental mentor would contribute:

> *I think mentoring is really important in the field of environmental education. Commitment is something essential in this field and it is best learned from others when it is felt and demonstrated. It is probably essential to the continuation of this field.*
>
> *Environmental education has been more holistic for me. My mentor and I have shared everything with each other from the factual, to the projects, to the aesthetic appreciation, to the spiritual connection through our involvement with environmental education.*
>
> *A mentor in environmental education can utilise the wonders of nature to develop an environmental conscience through better understanding the delicate ecological balance.*

The information from the first part of the questionnaire has served three purposes. Firstly, it has shown that this sample of leaders shares a contextual background with others who have become aware of and chose to become professionals in the field of environmental education (Tanner, 1980; Peterson and Hungerford, 1981; Newhouse, 1990; Palmer, 1993; Wilson, 1995). Secondly, it has demonstrated that the respondents understand the general concept of mentoring. They have been able to define the concept, delineate certain characteristics of mentors, outline the requirements of a mentoring relationship and specify benefits for mentorees (Levinson *et al.*, 1978; Kram, 1983; Segerman-Peck, 1991; Caldwell and Carter, 1993, Limerick *et al.* 1994).

Thirdly, and most importantly, the leaders have been able to distinguish the needs of mentoring specific to environmental education (Langton, 1984; Udall, 1986; Beeler, 1988; Snow, 1992a, b; Berry and Gordon, 1993). The knowledge, awareness and inspiration of the mentor is brought to bear on environmental problems and the mentor's achievements can be emulated. Often, the respondents spoke of the mentor as having a responsibility to the future of the world, to provide reasons for how and why the environment should be managed and conserved, to critique the values of environmental education, and to practice what they preach. The challenge for these mentors, as interpreted by the researcher, would be to initiate relationships that are intentional, that is, ones where they seek out new mentorees who may be potential leaders for the field and develop bonds which could lead to long-lasting professional and personal ties.

Mentoring was seen as important in formulating career choices in this wide and varied field, which has been described as multi-disciplinary and holistic by the respondents. They understood the responsibilities, time commitments, and the possible challenges to their beliefs that choosing to become a mentor would involve. Yet, this aspect was tempered by knowing the influence one can wield as a mentor. Not everyone was ready to take up this role. However, for those who were willing, they understood the benefits for themselves, their contribution to environmental education and how this experience might benefit a mentoree. Most encouraging was the realisation that mentors can help the cause of environmental education and that mentoring is a way to 'pass on the torch' thereby empowering mentorees to take committed action for environmental education.

4.7 Descriptions of the Mentoring Experiences from Survey Respondents

Yet clearly growth is not simply a matter of quantitative increase, there is a qualitative kind of change as well. *Daloz 1986: 130*

4.7.1 Mentor demographics

Part VI of the survey entitled, *The Mentor,* asked respondents to supply answers to questions regarding their mentor. As displayed in *Tables 4.16 - 4.18,* the mentors were mostly male, more than ten years older than the mentoree and from a similar cultural background. This statistical demographic information was enhanced by qualitative comments to queries such as, "Is this an important consideration for you", and "briefly explain". The number of respondents who reported that they had experienced a significant mentoring relationship during their involvement with environmental education numbered thirty-eight or seventy-six percent out of the total sample. Of those thirty-eight, twenty-eight percent indicated one major mentor while seventy-two percent marked that they had had many significant mentors. For the remainder of the questionnaire, respondents were asked to confine their answers to their most important environmental education mentor.

Gender of mentors

Table 4.16 The gender of the leader/mentorees and their significant mentors for environmental education .

Gender of the Mentoree	Percentage	Gender of the Mentor	Percentage
Male	47%	Male	78%
Female	53%	Female	22%

Remarks from the open comments section regarding the sex of the mentor revealed that the mentorees had a sense of gender equity. Gender of the respondent is indicated where appropriate.

> *Messages are not gender dependent.*
>
> *People are people, and I have no problems having a mentor of either sex.*
>
> *I learn from others regardless of gender.*
>
> *Personal qualities count rather than gender .*
>
> *Men do not have more expertise than women (female respondent)*
>
> *To me a mentor is many special things, none of which has anything to do with gender.*
>
> *Brains have ideas, not gonads. (male respondent)*
>
> *Most importantly, is s/he dedicated to the field and a major contributor or active participant in advancing the field?*
>
> *If an idea or program is good, it really doesn't make any difference as to the sex of the developer.*

Even though gender seems irrelevant, sometimes circumstances and contexts determine the gender of the mentor with the result that most environmental educators appear to be male.

> *Gender irrelevant. It seems in environmental education in Australia, positions of leadership/authority are still held by male majority. (female with male mentor)*
>
> *In the 1950s and 1960s there were very few females who had the opportunity to be mentors. There were none in my area. (male with male mentor)*
>
> *Circumstances and contexts in which I have worked have determined the gender of my 'colleagues'.*
> *(female with male mentor)*

The gender issue can become a complicated issue. Even though he had to select one major mentor for this study, one male wrote, "My mentors have been supportive males - Luck? chance? I don't think this is an issue". A female remarked, "Could have been either. But perhaps it was important that it was a male as I never felt a lot of acceptance, approval or support from my father". Another female explained, "It is important to have a woman as a role model in an often male dominated field (environmentalism)". Yet she chose to describe a male as her most significant mentor. Contrasted with this, a different woman responded, "The most significant mentor in my life was/is a male" and yet for the purposes of this study she chose to refer to her female mentor. One male suggested that females may give better input. He stated, "The gender of the mentor is not important, however, a female mentor is more likely to give good feedback". He did not explain further why he felt this was true. Another woman balanced this view with the idea, "Gender wasn't really important. She simply was the most open and interested in helping me".

Age of Mentors

It is of importance to notice that in this study 44% of the respondents noted that their mentors were younger, the same age or less than five years older as shown in *Table 4.17.* One male wrote that "some of my

Table 4.17 The age of the mentor as reported in survey question 6.2.

Age of the Mentor	Percentage
younger than mentoree	11%
same as mentoree	11%
less than five years older	22%
more than five years older	15%
more than ten years older	*41%*

mentors are younger", while another person stated, "I also work with a lot of youth. My aim has always been to facilitate youth leadership. I value the contributions and ideas of those younger than me as well". Yet mentors of all ages seemed valued for their experience in environmental education.

> *My skills as an environmental educator have been learned from people of all ages.*
>
> *What was important is what the person had to say and their experiences which gave credence to the saying*
>
> *Experience is most important to me. Often experience comes with age, but not always.*

Yet others preferred an older mentor for their increased sense of wisdom and positions of influence.

> *Age doesn't make an idea better or worse.*
>
> *We can learn from many, but frequently wisdom increases in proportion to experience.*
>
> *As a young graduate, it was important for my mentor to have had experience and to be in a position of influence and respect.*

Cultural background of mentors

The idea of cultural background of the mentors was probed in Question 6.3. The responses are shown in *Table 4.18.* Although most had a similar background, a few telling comments stressed, "Environmental education is not a cultural concern - everyone needs it and programs tend to be presented without a cultural theme"; "ideas are important, not culture". Another respondent expressed a similar opinion, but noted, "[it is] irrelevant, but it is probably easier to connect with someone when there is a larger portion of shared experiences". This was echoed in their remarks that having a similar culture "probably made initial development easier". The idea of shared language was brought out so that there would not be "a barrier to communication" and that "it may enable us to understand each other more easily without cultural differences to deal with".

Table 4.18 The cultural background of the mentor.

Cultural Background	Percentages
Same	*94%*
Different	6%

Of the two respondents who had a mentor from a different cultural background, one explained, "I had to temper the relationship with the fact that some of the learning was slightly culture dependent and so make adjustments". The other felt it was extremely important since the mentor "came from a society in destruction - the Ukraine". Others respondents noted that the opportunity to work with mentors from different background would be enriching.

> *I enjoy working with people from different cultural backgrounds and recognise the benefits of such contact.*
>
> *Not generally important, however, it could be important to have a mentor from another culture if you are teaching in that culture or if you have students from that culture.*

The idea of expertise as "the key factor in the quality of a mentor" was seen as more important than cultural background. One person explained, "Respect, guidance, ideas and compassion are more important than cultural background".

Timing of the mentoring relationship

The next question solicited information regarding the most significant time that the respondent had known his/her mentor. Since many respondents ticked more than one category, ranked answers are shown in *Table 4.19.* The environmental education leaders in this survey found their mentor primarily, but not exclusively in their early career with student days figuring relatively low on the ranking.

Because many of the respondents felt that they had the benefit of their mentors throughout their lives, it was not an easy decision for some to decide on the most significant mentoring time. One person wrote of this

Table 4.19 The ranked responses regarding the most significant time for knowing the mentor.

Significant Times to Know Your Mentor
1. early in my environmental education career
2. throughout my career
3. at career stage changes
4. mid career in environmental education
5. later career in environmental education
6. during my student days
7. pre-student days

dilemma, "Because I consider so many people to have helped me, I find this difficult to decide - [this mentoring] probably began as I switched from pure geography teaching to more environmental education activities about six years ago".

4.7.2 Initiation of the relationship

As mentioned in the previous section, the respondents were asked to confine their comments only to the most significant mentor for environmental education. A few people nominated a family member as their mentor and spoke of having their mentoring relationship begin in childhood. For example, one respondent reported that it began with "my father's *joy* of sharing natural systems with us as we travelled widely over the US experiencing many different ecosystems"; "a father sharing his love of biology with a kid who was interested". Two testimonies were given.

> *My first real role as an environmental education professional began with a summer job as the 'camp ecologist' at a Y camp. When professors expressed that maybe I was taking on more than I was prepared for, Dad encouraged me to help my success level rise. As I became more professionally involved with environmental education, I did need outside mentors to open networks and share resources. Dad would no longer have been enough.*

> *When I accepted the role as Director of PLT it was a culmination of many years of influence (grandfather). In the years that followed I had a context for developing that early influence even more.*

Other respondents explained how mentoring outside the family developed. Several cited tertiary education as the time that mentoring began.

> *Early on - I was still a pre-service teacher and during my student teaching experiences. It could have happened later, but it didn't. The earliness of my experience I think made it more important and has shaped almost all that I have done.*
>
> *half-way through my post-graduate diploma in Outdoor Education.*

Some found their mentors at the beginning of their teaching career citing, "early twenties - keen, young teacher"; "I was a rookie"; "beginning university lecturer (not new teacher); "beginning teacher in an environmental education centre - several years out of college"; "new degree in environmental education ed with some experience". Others were novices in related jobs and stated: "I was only six months into my job - I began work straight out of college in natural resources"; "H. was the expert in the field. I was trying to help kids. He taught me what I needed to know"; and "when I was a young biologist studying bears". Two people described more fully the initial attraction to their mentors. Gender and job descriptions are included to emphasise the similarity of the responses, yet the variety of positions.

> *As a cadet in the Department of Primary Industries, I worked with a number of scientists in a number of disciplines. Of all those scientists, one had the personality, excitement and concern for my development which encouraged me to follow his scientific interests. I was undertaking a part-time university degree while working in DPI. (male, natural resource scientist)*

> *Beginning of environmental education career - I was unsure of myself (how to take what was on the 'inside and bring that out so as to educate others) and was afraid to take risks in my professional development. It was my first major responsibility.*
>
> *(female, manager of raptor rehabilitation centre)*

Only one person mentioned meeting his environmental education mentor through continued professional development which he described as, "an intensive formalisation of environmental education as part of my job".

Mentoring during mid and late career stages

An important feature for this research is that a number of leaders in this sample found their mentor during mid and later career stages. This finding contrasts with the research of Levinson (1978) who observed that, after about age forty, men have outgrown the readiness to be the protégé of an older person and rarely have mentors themselves, and confirms that of Roche (1979) who found that more than a quarter of the top executives he surveyed became protégés during the second decade of their careers. *Table 4. 20* highlights some of the mentorees' comments.

Table 4.20 Comments regarding finding the mentor at mid and late career stages.

Career Stage	Finding the Mentor
mid career	*began at major career change*
	I had taken some Project WILD classes and loved them. I had begun taking many environmental education classes to develop more of an understanding of the interrelatedness of our environment. I wanted to begin projects for our school and for my class.
	I was just doing what I always do! (teaching and struggling) Thinking I was the only one out there going through all the crap but knowing there were others out there willing to help me share. Also someone who actually believed in me.

	I was at the stage of wanting to change what I was doing and how I was presenting environmental education concerns. This relationship provided what was lacking at that point - a new program to centre on.
	Years before I was even interested. He is the husband of a good friend and I had many social meetings before my interest was sparked in environmental education.
later in career	*I had just finished my responsibilities as a member of the development/writing for PLT. It was during the switch from development to implementation.*
	exploring alternate career options
	The mentoring relationship began earlier (about ten years ago), but was much wider in scope than just environmental education. The environmental education mentoring is recent - about two years or so.
	I already had twenty-five years of experience in natural resources, when I met her. (older male to younger female)
	I was looking for specific direction in environmental education at this point. He offered, I accepted.

A number of themes emerged when analysing the qualitative data from the questionnaire regarding the impetus for initiating the mentoring relationship at various stages of the leaders' environmental careers. For some the meeting of the mentor was serendipitous, a 'chance introduction' while they were students, but some of these encounters led to on-going relationships lasting over twenty years. For another person, the mentoring began during mid-career: "We were brought together - he as a visitor and I, as the local representative". Many respondents, however, expressed the idea that they were searching and the enthusiasm and experience of the mentor helped fill a need.

> *At that time I had little idea where I was heading. He filled that role.* *(early career)*
>
> *I had tons of enthusiasm for environmental education, but didn't know what or how to do all of the things I wanted to do.* *(mid career)*

> *I wanted to experience environmental education as a possible alternative to research. He invited me to help out and stay on his refuge for six months to decide.*
> *(career change)*

The mentor seemed to have a magnetism and vitality which, coupled with his/her vision of environmental education, was an attraction.

> *respected his accomplishment - wanted to work under him as I valued his 'visions'.* *(early career)*

> *I was interested in the big picture and he had experience and master's level work in planning. 'When the student is ready, the teacher will appear'.* *(early career)*

> *His vitality and enthusiasm for the subject ... it was contagious.* *(throughout career)*

Mentor availability and encouragement were important aspects of the relationship.

> *I was a pre-service teacher, he was my first instructor and student teaching adviser. He was willing to spend some extra time with me.* *(student days)*

> *respect, excitement and he made a positive attempt to encourage our friendship* *(early career)*

> *My mentor had knowledge, skills, experience in environmental education compared to my inexperience and low self-confidence.* *(early career)*

> *I was very frustrated. C. was a new door yet to open - full of new and exciting experiences.* *(mid-career)*

Philosophical congruence

For some respondents, it was important to have a philosophical congruence, that is, a similar system of principles, attitudes and values about environmental education held by the mentor and the mentoree. One female, early in her career, said of her mentor, "We had similar belief systems, and had mutual respect for one another ... he saw that I had integrity in my work (it came from the heart); and I would ask his advice when appropriate". Others cited that the mentors demonstrated that they were "practicing what one preached" and "cared for the environment". Other comments which embody this philosophical congruence are:

> *I think if people can connect on that spiritual, that values level, that is where the relationship starts and all the other facts and figures come a lot later.*
>
> *I don't think we ever sit down and talk about environmental philosophy, because both of us understand each others' position because we have worked together for so long, it is just accepted.*
>
> *I think that was a philosophical thing we agreed on and both believed that the kids do it. Of course, we argued the whole time or disagreed or debated everything. I think we always listen to what the other person has got to say.*
>
> *My basic views of environmental education coincide with those of John.*
>
> *I think we share a very strong commitment in the same beliefs.*

Exchange of expertise

Some deliberately chose their mentor to pursue graduate work. This led to an exchange of expertise. One respondent in mid-career was drawn to his mentor because of "increased awareness of broader education issues and requirements to bring about change through education". For others, the specific area of environmental knowledge was important.

> *There was a demand for me to have information and provide it to schools.* *(early career)*
>
> *seeking of better tools/method of teaching for university lecturing.* *(early career)*

the program being developed - Rivers of Colorado Water Watch Network. *(mid career)*

my interest in his knowledge of natural history, specifically birds and butterflies . *(career change)*

in-service of Project Learning Tree *(career change)*

As a colleague we have conducted many field studies. *(throughout career)*

This need for specific guidance in environmental education points back to the special characteristics of these mentors as delineated in Section 4.5 - having a broad-based knowledge, demonstrating a personal ethic and passion about the environment, modelling appropriate techniques and balancing theory with practice.

Frequency of meeting

Questions 6A asked how often the pair met during the formative stages of the relationship. The percentages are shown in *Table 4. 21.*

Table 4.21 The percentage of time that the mentor and mentoree met during the formative stages of the relationship.

Initial Meetings	Percentages
Daily	22%
Weekly	20%
Fortnightly	3%
Monthly	28%
Other	27%

The respondents explained their patterns of contact during the formative stages of the relationship: "My mentor is a friend, sometimes I see him weekly, other times I may not have contact for twelve months"; "Infrequently to start with, but monthly/fortnightly after the program took off"; and "may become more frequent for short periods". It is important to note the variations of meeting frequency during the initiation of these informal mentoring relationships. Many of these began with infrequent meetings and this increased as the relationship grew; yet for others, the opposite took place. In effect, the pairs sought their own 'comfort levels' regarding the need to have contact. This data contrasts with the literature findings about formal programs where meetings are regularly scheduled (Shea, 1992).

4.7.3 Development of the relationship

An initial attraction between the mentoree and the mentors sparked the beginning of relationships which didn't seem to be dependent on a particular career stage. Although the mentoring pair met at different frequencies during the formative period, the relationship continued to develop for a variety of reasons. Some had mentors who were university academics who helped them when they were changing courses or during post-graduate study. One mentoree does not underestimate her own initiative and willingness to be mentored when she wrote:

> *I think a lot had to do with my interest, enthusiasm, and the willingness to take risks. I was a good student and worked hard. He was willing to let me tailor my student teaching experiences to teach two different weeks at the outdoor lab school, taking time off in between. He was unconventional and a real person - not some superior professor.*

Other characteristics that kept the relationship growing was an openness and modelling on the part of the mentor, the mentorees growth in self-confidence and joint outside interests.

> *I was inexperienced and lacking confidence. My knowledge of environmental education, aims and principles were only beginning to develop. My mentor gave guidance and advice and assisted in arranging opportunities for my professional development. My mentor was often a model.*

> *During my three year cadetship working with a number of scientists, he was probably the only one with whom I developed a personal relationship and the only one that*

> *took a special interest in my career. We probably had similar outside interests.*

One person related a significant emotional event which bound him to his mentor: "Death of a game warden who was a close friend - exposure to lots of poaching - desire to change all I thought was wrong with the world". For others, it was a matter of having common perceptions: "Love of the sea, respect of the idea, perception that we would stuff it up"; "common belief in: Aldo Leopold, conservation, hands-on teaching, start with kids". Friendship also played an important role: "We have been friends socially and also our spouses have been friends"; "Friendship! She showed me that she really cared about me, and sincerely believed in me and what I was doing".

No matter how much initial interest there is, one respondent summarised the important criteria of availability for the development of a mentoring relationship.

> *As I became more interested in becoming involved in environmental education (someone else got me going actually), I realised how knowledgeable he was and called on him. Since then I have always felt he was available to help me. His generosity with his time and interest is super and he always encourages me to call again.*

This seeking of more specific knowledge from the mentor sometimes led to a delegation of responsibility. One mentoree in a later career stage wrote that "my mentor asked me to prepare and teach a course". Another person indicated that this kind of interaction with the mentor throughout the career led to "mutual professional development needs".

Length of the relationship

Just how long did these relationships last? Thirty-five percent reported less than ten years with the highest frequency being three years. For the fifty-three percent who marked ten to twenty years, a relationship of twenty years was the highest frequency. Twelve percent indicated that the relationship had lasted over twenty years with one instance each at twenty-five, thirty-five, forty and fifty years. The mean length of the relationship then was 14.3 years. This distribution is displayed in *Figure*

4.1. These findings are important in that little of the mentoring literature across various fields has reported such long-lasting relationships (refer to Section 2.3). What may have contributed to the longevity of these relationships are the topics open for discussion between the mentor and the mentoree.

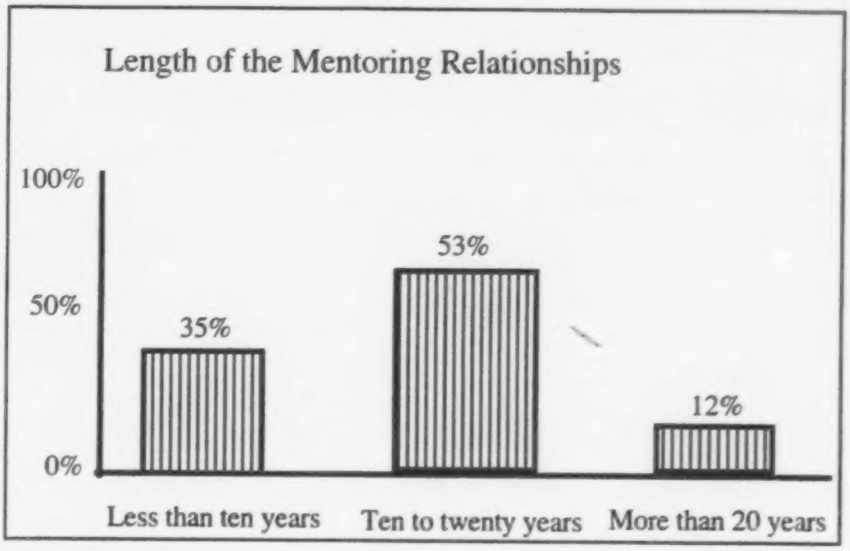


Figure 4.1 The length of the mentoring relationship as reported by the survey respondents.

Discussion topics

Survey respondents were asked to indicate which topics they discussed with their mentors when they met, telephoned or wrote to each other. These items are presented in a rank ordered list based on 'yes' responses displayed in *Table 4.22* It is not surprising that these pairs ranked environmental issues the highest, since for many of them it was their initial reason for establishing contact. What is important is that 'personal matters' ranks so highly. This means that the mentor was willing to move beyond professional interests to establish a personal relationship.

Table 4.22 Rank order of discussion topics between the mentor and the mentorees.

What was discussed when meeting with your mentor?	Percentage of *Yes* responses
Environmental Issues	86%
Education Issues	75%
Environmental Philosophy	75%
Personal matters	72%
Work and Career	64%
Personal Philosophy	61%
Professional Development	53%
Career Options	47%
Work Only	17%

A sense of personal cognisance is seen as valuable in the developing mentoring relationship and this is evidenced through some of the open comments. One person acknowledged, "we discussed everything under the sun from changes in educational policy to new program developments and other professional projects, sport, and politics". Other samples of these remarks included:

> *We were both teachers and she was teaching a session as well as taking sessions. We enjoyed each other's company. Many subjects came up, everything under the sun.*
>
> *Unfortunately we had far too few chances to really 'get into' any of these ideas, except during a crisis - and then almost always by the wonder of the telephone.*
>
> *We talk as friends about whatever is required - work, family.*
>
> *where to get a beer!! and does the bar have a good band.*

As can been seen, the discussions between these informal mentoring pairs was free-ranging including philosophy, personal matters, work and career options.

4.7.4 Influence of the mentor

Tell me to what you pay attention and I will tell you who you are.

José Ortega y Gasset

Given the array of discussion topics and the varying contact time between the mentors and mentorees, it is important to understand what influence the mentor had both personally and professionally on the leader. *Figure 4.2* presents a graph of the responses.

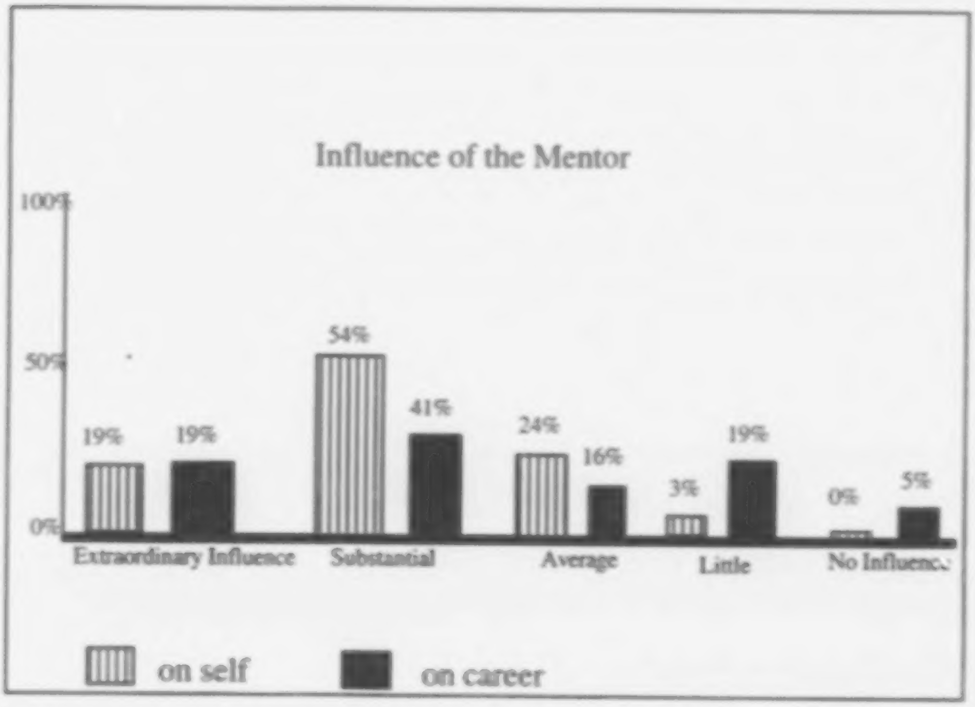


Figure 4.2 Comparison of the amount of personal and career influence the mentor had for the mentoree.

4.7.4.1 Personal Influence

The leaders in this study substantiated their mentors' personal influence with explanations about mutual support, a gain in scientific knowledge, especially biology, and learning political awareness. Significant remarks categorised in *Table 4.23* emphasise how the mentor's approval and ability to bolster the mentoree's self-confidence through a personal interest can sometimes result in the mentoree making new or enhanced career changes.

Table 4.23 Categories of personal influence the mentor had on the leaders .

Categories	Personal Influence of the Mentor
mentor approval	*He was encouraging and made me feel competent. He appreciated my sense of enthusiasm and allowed me to feel like I could accomplish anything. At that point, his approval was more important than my parents, other people.*
reaffirmation of belief	*She was more like a guidance for me and a reaffirmation of what I believed.*
	Convinced me the ideas I had in mind were important for environmental education.
gained self-confidence	*Shaped some life and professional attitudes, taught me a lot about personal mental strength and withstanding adversity.*
	By being able to work with my mentor, I gained a lot of confidence and knowledge in a non-threatening manner - not tests!
personal interest	*He was interested in my personal life. We had common interests - scouting, hiking, outdoor activities. He made me feel comfortable with his family.*
	C. has always cared about me. Just knowing someone cares and is concerned about you personally can make the world of difference in how you feel about yourself.

4.7.4.2 Career Influence

The data presented in Table 4.24 was gathered in order to explore the relationship between sharing a common workplace and the influence of a mentoring relationship on the mentoree's career.

Table 4.24 Comparison of the workplace of the mentor and mentoree.

Item	Yes
same workplace	12%
same organisation	32%
same city	35%
same region	52%
same state	66%
same country	80%

Eighty-eight percent of the mentors were not employed in the same workplace as their mentorees, but sixty-eight per cent were in the same organisation. Although most pairs were not in the same city (65%), it was almost evenly distributed (52-48%) between working in the same or different regions. The mentors were, however, usually in the same state (66%) and the same country (80%) as their mentorees. Sometimes they are in the same workplace by necessity, sometimes by choice, but often they work in different aspects of the same field. Comments substantiating this view are presented in *Table 4.25.*

Table 4.25 Workplace orientations of the mentors and mentorees.

Workplace	Explanation of the Mentoree
same work place by choice	*I worked closely with him virtually as his personal assistant. I later worked with other scientists in other disciplines and when given a choice following my cadetship I opted to work for him.*
	similar workplace situations, decision to work together and form a business
	Our experience and services being complimentary - being able to assist one another with project.
	Knew of him and his expertise in adventure education and field science. Asked to do internship with his program at a private high school running and outdoor experience program. I was hired as summer staff for his teen adventure program.

	The continued success of the program that was started - the desire to share the credit for the start of the program and to allow me the opportunity to share its importance.
same workplace by necessity	*As environmental education consultant, I was charged with reviewing the work and teachings of the mentor. I was also responsible for the organisation of his visit and was his companion while visiting.*
	needing to work with that person to assist in my work
	I acted in my mentor's position while he was on leave.
	an 'internship program' through CSU
different aspects of the same field	*Mutual interest in biology of the koala and other native Australian species. Both experienced in different aspects of the biology of marsupials. Mine a veterinary clinical view point and his a broad biological viewpoint.*
	We worked closely together on many issues between our two organisations over the past ten years.
	She became the director of the national project
common interests in environment	*Working in the field with the mentor, obtaining ideas from mentor provided 'food for thought' about the environment*
	common interest in fieldwork
	similar interests, physical attraction, meeting in a week-long summer field workshop

Because continued contact and availability are necessary for the development of a relationship, it was necessary to find out how this was accomplished. Very few had daily contact and, if so, it was on an informal basis. Most met intermittently. For some it was a monthly telephone call. Others wrote or called each other two or three times a year. A few pairs only had contact rarely as they were in different countries, one had changed careers completely, three had retired and four mentors had died. One mentioned, "He no longer works in education or with regards to the environment. Total career change"; another said of his deceased mentor, "His spirit still works in this ecosystem and his atoms are a part of it".

With this lack of a common workplace, it was important to analyse why the mentorees responded the way they did regarding the amount of influence the mentor had on their career (refer to *Figure 4.2*). A few persons reported *no influence* since they were in "differing career areas" and "his health was failing as I moved into my career". Others reported that the mentor "supported, substantiated and consolidated the direction I was going"; another appreciated the mentor's "support for me to undertake doctoral studies overseas". While mentors could not be of help in all areas of a career, their partial influence was noted as in this comment, "Financially - nil, (to make money I needed a financial/business mentor, so I found others to help), but philosophically - great".

Again as with the personal dimension, self-efficacy spills over into the professional career even if the mentor can be of no help in securing a job. Two respondents wrote:

> *R. gave me the continued belief in myself and the incentive to constantly strive to follow her example.*
>
> *Did not help me find a job or develop educationally - just helped with the desire to do so on my own.*

As reflected in the literature (Udall, 1986; Beeler, 1988; Biel, 1988; Crowfoot, 1992; Gumaer Ranney, 1992), having a mentor can make one a better practitioner of environmental education by learning new approaches, broadening contacts, developing the mentoree's programs and increasing political nous. These respondents noted that sometimes their mentors were able to assist in their career paths by substantiating their choices or providing new opportunities. Further comments regarding the mentors' influence on careers are shown in *Table 4.26*.

Table 4.26 The mentor's influence on the career of the mentoree.

Categories	Mentor Influence on Career
career opportunities	*By giving me new opportunities to teach and through encouragement she has assisted in opening up a new career path for me. Also watching her teach has given me a good model to build on.*
	I have worked with this person in all aspects of programs from field-testing exercises to working together on projects. She has helped me greatly in choosing the direction of my career path re: specialising, shown me my strengths, and given me confidence to do so.
	She has provided me ideas and the opportunity to work in a new career setting which has allowed me to grow in my dedication to environmental education. She has also guided me in the development of my new program.
consider change	*She allowed me to experience success in another career opportunity that has caused me to consider a possible career change or alteration.*
	decided that teaching people should do more good for the environment that doing lots of research.
	I had the self-confidence to move forward, change careers and take on an uncertain, yet rewarding and significant, new directions.
included in projects	*R. has always been several steps ahead of me. Knowing she has been successful helps me believe I can be successful. She has included me in many projects. She had 'dropped my name' to people looking for environmental education people to participate in meetings. She has introduced me to people who have given me many opportunities in my professional development.*
follow in footsteps	*Firstly, starting me off on a career in his field. Secondly, assisting me in my career virtually ensuring that I followed him in career development until I took over his position.*

broaden contacts	*broadened my working base/contact with professionals in related field of environmental interest*
congruent approaches	*[Mentoring] helped me realise the need for environmental education in general education, especially the natural science course. That it is an investigative-discovery course in which students were helped to make informed decisions and answers.*
inspiration	*I have my philosophical ideals on environmental education from him. He inspires me today in environmental education*
	His greatest influence has always been his openness and generosity; this had led me to continue to grow within the area of environmental education. So I guess his influence is quite strong. His constant knowledge, enthusiasm and dedication.
values mentoree's skills	*He valued my background and skills in assisting to develop his programs.*
Gaining Political Nous	*increased awareness of political issues and motivation to be active in environmental issues*

It can be seen that mentors influence the careers of mentorees through their encouragement, sharing expertise, offering new opportunities, and sharing their networks. Personal affinity and professional complementarity are found to be important bonds between the pair.

The influence of women mentors

It is interesting to note that some of the comments presented above highlight the effectiveness of women mentors for both women and men mentorees. Earlier data from this research pointed out the lack of women in the field of environmental education and, therefore, the lessened opportunity to have a woman mentor. However, it seems, in the opinion of these leaders, that those women who have become environmental education mentors are having beneficial effects on their mentorees. Two further examples substantiate this idea. One older male scientist from the natural resources area modelled his female mentor in devoting more of his time to teaching environmental education.

> *I now see teaching [environmental education] as an important stream within my present career and am pursuing this enthusiastically. For example, in the next twelve months I will be involved in at least twelve weeks teaching. In previous years, it might have been twelve hours.*

Another older male with many years of successful experience in environmental education described the influence that his mentor, also a younger woman, had on his later career.

> *She revised my whole attitude towards in-service and evaluation of environmental education.*

In summary, the answers from the respondents regarding the mentor's influence on their careers ranged from understanding the need for environmental education, finding enjoyment in the field, to understanding the philosophy and politics underlying it. One respondent offered these final remarks showing the initial attraction, development and the changes a mentoring relationship can have.

> *My mentor assisted in cementing my enjoyment of environmental education as a correct career move. My mentor displayed very good organisational skills, established operational procedures, influenced my own development of these skills. The relationship with my mentor later lessened as I questioned educational goals, developed my own views of the nature of environmental education, leadership roles and responsibilities. My mentor had belief in my ability as an effective environmental educator and belief in my capability to take on responsibilities, also take on further educational studies.*

4.7.4.3 Influence on Leadership

Beside understanding the personal and career influence of the mentors, it was important to gather information on how the mentoring relationship may have influenced the leadership choices of these environmental educators. Commentaries from Question 7.3 are categorised in *Table 4.27* under five conceptual headings: focusing, synergy, leadership channelling, modelling, leadership promotion, and non-promotion orientation .

Table 4.27 The mentors influence on the mentorees' leadership roles.

Categories	Mentoring Influence on Environmental Education Leadership
Focusing	*He gave me many opportunities to work in the field with the clientele and programs in which I was interested. We continually discuss the 'state of environmental education' as it relates to the work we do.*
Synergy	*I sense that the few time we worked together the results were synergistic.*
	His opening my life to the living world and was a profound influence. Plus he was a personal leader in conservation and environment and epitomised balance and fairness.
Leadership Channelling	*supported, sustained, consolidated the 'direction' one wanted to go*
	I am looking into becoming more involved with this program if the opportunity presents itself. Also, I have found the ability of creating an associated program that may be tied to the Water Watch Network.
Modelling	*He made me feel like I could do or be anything I wanted and I did just that. He is always growing and open to new ideas and I have modelled that behaviour after him.*
Leadership Promotion	*Mentor has encouraged me to develop in the area of environmental education. Has been a referee for jobs. Has let me know of openings or provided opportunities for strategic career moves.*
	I stopped teaching and went into environmental education consulting as a result of job opportunities offered by one of my mentors.
	I am now an Environmental Education Centre principal.

	He encouraged me to follow him in his discipline. He appointed me Assistant Director to him when he was at the end of his career. This probably resulted in me assuming his position on his retirement.
	She has had a major role in all of my choices. She continually supports and encourages me to continue to seek out new challenges and experiences. She actually is personally responsible for my position with the Forest Service.
Non-promotional Support	*He was always supportive and complimentary of my work and achievements even if they were different from what he might have done.*
	Influence significant as he has introduced options associated with his teachings which allow a greater diversity of approaches.

4.7.4.4 Change of influence over time

Since the influence of a mentor can change over time both personally and career-wise, it was important to probe these issues with the leaders in this sample. The data suggests a continuum of opinions from little to no change, deeper understanding, less reliance on the mentor, to developing their own vision. Remarks are categorised in *Table 4. 28.*

Table 4.28 Comments regarding the changing influence of the mentors over time.

Degree of Change	Has the influence of your mentor changed over time?
little to no change	*still strong (although deceased)*
	I still believe in his philosophy and ideals.
	Very little change. We share knowledge and work together now as we have always done. I tend to rely on him less now.
move away from student role	*From the beginning of 'teacher' vs. 'student' role to one of equality in most areas.*

	Initially I was learning from C, later it was more sharing.
mutual respect	*... have become less dependent for her guidance. It has become more of a mutual sharing of ideas. Mutual supporting and respect between us. We work more as a team than as a teacher/ student.*
	I feel I have gained my mentor's respect as a leader myself.
Becoming equal	*We are more like 'equals' and we now help each other out, yet he is still more advanced in the 'career' aspect. We have become very close personal friends.*
	From one of offering opportunities and resources to one of an adviser and sounding board. Encouragement and support has been constant and non-judgemental. I feel more equal with my mentor now - he comes to me for advice now.
interactive partnership	*We have developed a highly interactive working partnership.*
	I feel I can discuss and initiate more than listen. I feel I am equal, as far as certain areas of knowledge are concerned. I feel I have gained my mentor's respect as a leader myself.
deeper relationship	*She has praised me more. (male mentoree with female mentor)*
	We have become close personal friends, although we still discuss the state of his 'work' and mine.
	As I grow older, I understand more about the woman's life and what she had to gain and lose.
less reliance on mentor	*He now has developed a new niche, landscape architecture, which is beyond my special interest. He is no longer actively involved in teaching and training. He has retired and I have changed responsibilities.*
	It is less now- I feel like I am now a mentor.

more discriminating attitude toward mentor	*Yes, from general acceptance to a more discriminating attitude. Fractures and flaws in my mentors personality and professionalism became more obvious with time, but I maintained my respect for him.*
	I now critically reassess the mentor's message and modify it significantly.
	I take less notice of him now! I challenge him more. I reject him more.
Mentorees develops their own vision	*Little influence now. As my environmental education experience, understanding and competence improved, the relationship with the my mentor changed even to the point where I questioned his philosophy, developed my own values and ideals/visions that differed from his.*

4.7.5 The effectiveness of the mentor

Respondents were quite definite in what they felt made an effective mentor. In order for the relationship with a mentor to be seen as beneficial, personal, professional and social dimensions needed to be activated. Two respondents stated:

> *Not only was he caring, but a real professional in the field of environmental education. I have had other people be supportive of my work, but they are not a mentor. Also, he was a mentor on both a personal and professional level. I was and continue to be open to his influence.*

> *Deep sincere human qualities mark my mentor. She knows how to listen, reason carefully, kindly responds, respects everyone and everything, sincerely is humble and loving, polite and humorous, well-balanced in all aspects - professional, personal and social.*

Over one hundred different words were culled from the comments to question 7.4 regarding the characteristics of effective mentors. Some of these relate back to the general literature on mentoring (Segerman-Peck, 1991; Limerick *et al.*, 1994). Words mentioned more than three times are organised into professional characteristics: knowledge, experience, resource person, flexibility, and intelligence; and personal characteristics: warm personality, encouraging, supportive, respect for the mentoree, friendship, caring and availability. Other descriptions pertain particularly to leadership: organisational skills, good communicator, acknowledged leader, problem solver, good forecasting ability, likes/ uses discussion, courage to disagree, willingness to take risks, develops effective systems, excellent manager, challenges self, personal values system, committed, trust, fair. A few phrases dealt particularly with the field of environmental education, such as: ability to understand the environment, an appreciation of the environment and passion for environmental issues.

Seeing how these words and phrases are used in context in Table *4.29* gives a better understanding of what the mentorees felt about an effective environmental education mentor.

Table 4.29 Characteristics of an effective mentor reported by the mentorees.

Descriptors	What makes an effective mentor?
Professional Characteristics	*This person was very knowledgeable, skilled and experienced. We worked closely in a team situation, mentor often a model or instructor or adviser. Mentor only available resource person initially. Mentor was flexible, supportive, willing to model. Was willing to give responsibility and freedom to pursue own projects.*
discussion of issues	*We respect each other's abilities and are open with each other in discussing issues, professional or personal.*
commitment	*I admired and respected this person - who was self-educated and very committed to his work.*
opened belief system	*I respected his knowledge and work experience. He passionately believes in what he says. He practices what he preaches - walks his talk. He opened my belief system to a new, exciting world where I could apply the lessons of history to the decisions of the present and future.*

high standards	*Some common outside interest, his warm and friendly nature. The respect in which he was held by his peers. The respect he showed for my abilities. He set high standards, was highly intelligent and had sound ideas and good forecasting ability - he predicated many advances before their time.*
leadership expertise	*I admire his experience, expertise, leadership and ability to develop effective systems. He is an excellent manager, willing to take risks, continues to challenge himself personally and professionally. He is highly intelligent, values and respects others' special skills and contributions. He is a role model for the type of leader I strive to be.*
passion and courage	*His passion for environmental issues and his courage to disagree with big business.*
Personal Characteristics	*She allowed me to grow in my belief that I have something worth sharing - she is concerned about me as a person and friend.*
authenticity	*Respect for her knowledge, experience, age, attitudes, abilities, leadership, intelligence, values, capabilities, creativity, organisational skills, confidence, energy and talent.*
not stifling	*She has always been helpful, but not stifling. She has always been supportive of me and believed in me. She has always shared and listened to me. We have a mutual respect for each other.*
determination	*Her strength, determination and love of what she did.*
role-model	*brother to brother situation with seeing and perceiving modelling.*
confidence builder	*This person had confidence in me and encouraged my exploring and searchings.*
sounding board	*He helped me have the courage to take risks; he was a good 'sounding board'; he was a true friend; he never tried to 'impress' me or act over-important (he let me see him as a real person).*
shared family	*I was young, green, interested in learning new thoughts. He had open ideas and was a warm person who allowed me to become friends with his family and friends.*

supportive	*Great depth of knowledge and experience, very warm and encouraging demeanour, very supportive and non-demanding.*
Stimulation of Leadership	*Stimulation of ideas and problem solving - leading to establishment of successful clinical practices.*
relevant information	*I get on with her very well and I admire what she has been able to achieve in her own work. Her information and advise is very relevant to me.*
space to develop	*He gave me the space to define my own actions and choices while being available for inquiry.*

4.7.6 Endings of some of the relationships

The final question of this section asked about the ending of the relationships. It must be noted that there were only 16 responses to this question, as most of the thirty-eight leaders felt that their relationships were still intact. For those who did respond there is a continuum of positions from on-going, broken, resumed, to finished. The *very friendly* category was marked by 9%, *friendly* 2%, *supportive* 5%, with no one ticking *neutral* or *unfriendly*. One person reported a 'hostile' ending stating, "At one stage we fought on principle and because of his actions to me personally. We have resumed a relationship which is now much more cautious on my part". This person was able to be interviewed and redefined the ending as *supportive* because the rift in the relationship had been mended. Another mentoree reported a breach in a relationship that took time to heal.

> *When we both bid on the job of leader of this team, I knew I would be competing with him for the job. While he had more technical and philosophical experiences, I had more people-skill in relationships and conflict resolution. I accepted the job and that put our relationship in a bad place for about a year.*

The data from this study found that even when career paths veered, a supportive ending to the relationship was possible.

> *Personal educational goals differed and it was time for a personal career change for my further development.*
>
> *My mentor was supportive of my decision and the relationship is still friendly.*

One person noted a lasting influence, "I continue to admire her and learn from her". Another spoke of lessened impact, "our relationship has not ended, but as we seldom make contact now, it is less intense". One older mentor had been quite ill and unable to communicate. Even though one mentor was deceased, the mentoree noted, "I attended the memorial service and still have a good relationship with family members". Retirement caused diminished contact, yet one mentoree felt, "My friendship remained, but his immediate influence and guidance virtually ceased"; another felt, "he now has other interests in retirement, as do I in new responsibilities".

4.7.7 'Doorknob remarks' - other issues for mentoring in environmental education

In closing the questionnaire, all respondents were given a final chance to express their opinion concerning any other issues regarding mentoring in the field of environmental education. The idea of 'doorknob remarks' came from an episode of Dr. Finlay (1995, ABC Television, Australia). Dr. Finlay's father, an old-time general practitioner, finally figured out at the end of his career that patients tell you the most important thing you should hear when they have their hand on the doorknob and are leaving the room. In some ways, the final comments from the respondents, argumentative and contradictory though they seem, are often the most telling of all.

Several leaders emphasised the idea that there is a scarcity of mentors in environmental education outside the teaching field.

> *I have been in a situation where I have been responsible for a number of students who have undertaken a personal knowledge pursuit in environmental studies. Finding suitable mentors outside the teaching area is difficult.*

> *When I developed in the field of environmental education there were very few role models. It was a new field where everyone was exploring and experimenting. I suspect all 'leaders in environmental education' were in a similar boat. Trial and error was my main teacher. School based environmental education is probably different as the school system lends itself to mentoring more.*

Another person firmly disagreed, saying mentoring has played no role during her teaching career.

> *I have taught for sixteen years and been taught for many more, so 'teaching' is a term that I understand. 'Mentoring' however has played no part in my life or that of those around me.*

Still, another person suggested that teachers did not make good mentors arguing, "Personally I don't feel teachers are good mentors. They are too 'subject' based and tend to take over, organise, teach too much". Another person concurred stating, "In my twelve year career as an educator, I never had much help and support from district administrators and teaching colleagues. All of my support came from outside sources, the Forestry Department, Division of Wildlife and the Soil Conservation District.

Some respondents questioned the importance of mentoring at all.

> *I feel that I have not had a chance to compare mentoring with other forms of professional development. For me, it was not important. For others, I can see it has been in the last few years where there have been people to follow.*

A couple of people in this sample nominated a father and a grandfather as their mentors. One respondent questioned if family members can be 'true' mentors. At first, she was reluctant to nominate her father as the major mentor, but gave good reasons why she finally chose to do so.

> *There are several people who were/are mentors in a more traditional role as mentor. I still felt it necessary*

> *to name dad as my most significant mentor. He instilled in me a curiosity of the natural world and the care to try to have and make a positive impact. Many times I could have easily let environmental topics float by as many teachers do. But this ethic was ingrained. My father helped develop in me the sense that the road less travelled is not a bad thing.*

It was not in the scope of this research to learn about all of various mentors the selected leaders may have had during their careers. Therefore, having to limit their responses to only one major mentor for environmental education posed a problem for some respondents. They argued:

> *I believe from my own experiences that many individuals develop their attitudes from many episodes in their life, from individuals that may unintentionally affect the individual in many ways. In some ways, I believe it will be difficult to effectively document this aspect of the 'human spirit'.*
>
> *In a long career there are often a number of mentors who play a subsequent role at various stages in one's career. The questionnaire probably doesn't provide the opportunity to obtain information on the difference in the nature and role of mentors over time.*
>
> *I have encountered many individuals who have shaped my current philosophies and views even though some were not environmental educators.*

Good questions were posed for further research on this topic. Ideas suggested included: "How many mentors might one have? I believe that there have been several in my career"; "In what 'arena' are most mentors? Academic, field-experience, internships, residential experiences? Does mentoring include teacher training in public school education?"; "We need research on environmental educators who have had classroom experience".

The respondents found it difficult to pinpoint just one significant mentor because there was a continuum of guides in their lives who influenced their perceptions of environmental education. Some of those listed by the respondents were:

> *parents - for providing a range of nature based recreational experiences for me when I was young;*
>
> *friends who shared a love of the outdoors;*
>
> *university lecturers who increased my knowledge of ecology; photographers in the UK and Australia among others who inspired me with evocative glimpses of nature;*
>
> *my current peers in environmental education who are creative, innovative and caring people;*
>
> *executive officers of Education Department who have allowed me to have tremendous opportunities in my work as an educational adviser in environmental education; and my wife (an interpretive ranger) with whom I can share positive experiences.*

Some people examined the fine print to define who qualifies as an environmental education 'leader 'and 'mentor'.

> *I am not a leader in environmental education although I do work on the edges of the field. I am rather in a coordinating role designing educational materials and events.*
>
> *My mentor does not consider himself an environmental educator first. He is what I call a 'systems dualist' - a biologist and an executive director.*

One positive benefit mentors can have is to change or enhance attitudes developed from one's personal backgrounds. Two people explain this view.

> *Our background and area we grew up in affects our beliefs, awareness and action.*

> *I came from a background of life with a high involvement with the natural world in passive activities - camping, bushwalking, sailing. I was interested in more active pursuits - sailing and canoeing. B. led me beyond the physical aspects of looking at the environment into seeing its shapes, colours and reasons for protecting it.*

Pertinent questions were posed concerning whether environmental education has, in fact, a career structure and if so how does mentoring apply.

> *Do those mentored see a career structure in environmental education? To me it seems more a cause than a career, but I guess some career positions widen the sphere of influence the educator can have.*
>
> *Mentoring is not subject specific. I believe mentors help others enhance their skills to innovate. They form part of a support network.*

If mentoring, as it has been described by respondents in this research, is to be beneficial, it seems to require a length of time to develop. One person stated, "It isn't a short-term shot - there must be substance and continuity". Yet, another respondent gives a convincing argument for the latter point of view.

> *Very recently an experience of a short period of study (with a lecturer/mentor?) caused a major transformation in my views of education, changes in attitude to environmental education. The lecturer was very empowering, supportive. I could transfer my learnings to my own context. This lecturer was a facilitator of this but, I don't know that I would classify this as a mentoring taking into consideration all its many attributes.*

If mentoring has been considered as beneficial by many of the respondents, how can we enrich the possibilities of it happening more consistently. It was suggested that mentoring could occur "at conferences, meetings, in-the-field". Another possibility is during professional development training. One person reported, "The workshop facilitator network has been the most supportive factor contributing to my growth and leadership". It was strongly urged that:

> *Local, state and regional environmental education groups should implement purposeful mentoring programs for members. The phone company does this for women and minorities, so should environmental education organisations.*

Because this research was not meant to be a comparative study of mentoring in Australia and the United States, the researcher took care to be even-handed in reporting comments from both countries. However, the respondents themselves brought out certain differences regarding finding a mentor. In the USA, internships are underpaid and teacher support for environmental education is often outside the school, therefore these respondents urged wider networks as the pathway toward finding a mentor. In Australia, there is a chance for teachers to secure a secondment to a field centre or other environmental education positions which gives them an opportunity to explore options without jeopardising their career progress and increases their possibility of finding a mentor.

Respondents had definite views on what makes a good mentor. They felt that the mentors should not consider themselves as 'gurus' but should allow mentorees the leeway for personal development. Their opinions include:

> *Mentors should not impose, but allow personal development. They should also not have a dominant philosophical bent, which they rate higher than other approaches or philosophies, which is allowed to divert the growth of the individual.*

> *I think it is important to recognise that a mentor should be open to sharing ... just about everything, but still be able to accept that not all they say and do will 'fit' the person they are mentoring. Willingness of the mentor to learn from the mentoree is equally important - it develops a mutual respect and self-worth of the mentored person.*

Issues that should be addressed by the mentors were listed as "how to teach both sides of emotionally charged issues in order to change people's values" and "going beyond education *in* the environment".

An interesting idea emerged for mentoring stemming from a grassroots environmental education base, but leading to outward action. The respondent called it 'collective mentorship' which is reminiscent of Daloz-Parks (1993) 'mentoring community'.

> *There is a complicated web of individuals across the country, each possessing the desire for change. Each of these individuals relies on the others for information to advise strategies to facilitate change. Perhaps this could best be described as the 'collective mentorship'.*
>
> *The environmental movement is one led from a history of 'grass roots' or local residents concerns over an issue. This concern is then taken through to action of some kind. This is where the leaders and potential mentor emerge from.*

4.8 Summary - the Emergence of Major Categories About Mentoring from the Survey Data

Chapter Four has reported that most of the leaders had male mentors, but this was mostly due to the scarcity of women in environmental education in earlier years. However, both males and females pointed out that gender has little to do with the effectiveness of mentoring. Forty-four percent of the mentors were younger, the same age or less than five years older than the mentorees. This shows that experience in environmental education is a more important criterion than age. As reported by the respondents, the cultural background of this group was similar in over eighty percent of the cases, but culture, like age and gender were not the main considerations in defining what made them influential mentors.

These leaders met their mentors at various stages throughout their careers, but it is important to point out the frequency of those encounters in mid and later careers and note that many of these relationships were formed due to philosophical congruency linked to the goals of environmental education. An initial spark of personal affinity was sensed by both parties. This was followed with recognition of special characteristics of the mentor such as skills, knowledge, values, attitudes and high standards relating to environmental education. The mentoree in turn, needed to use his/her own initiative to follow through the mentor's interest.

There were more frequent meetings at the beginning of the relationship, but because very few of the mentor/mentoree pairs worked in the same workplace, contact lessened as the relationship progressed. Even if the mentor was only approached once or twice a year or lived in a different county, this did not cause a break in the relationships. Fifty-three percent of the leaders reported relationships lasting from ten to twenty years. Critical to these long-lasting relationships was the availability of the mentor for advice, encouragement and support which was offered through phone, letter and occasional meetings. During that time many issues were discussed both professionally and personally.

Fifty-four percent of the leaders reported that their mentors had substantial influence on themselves personally, while forty-one percent reported substantial influence on their careers. This is an important point since sixty-nine percent of the mentors were reported not to work in the same organisation and, therefore, could not be responsible for direct promotion. It is important to note the mentor's influence on the mentoree's leadership. The relationship seemed to help them focus their work, hone their skills through modelling, follow through with new opportunities and develop their leadership skills.

Other benefits for the mentorees were seen as reaffirmation of their beliefs and career choices in environmental education. The remarks about professional help from the mentor were always blended with a personal relationship which encompassed friendship, trust and genuine caring. Even though the influence of the mentors changed over time, it never became one of disrespect. Instead it became a matter of having less reliance on the mentors as the mentorees created their own visions of environmental education and moved toward mutual respect, equality, colleagiality and enhanced leadership.

In the end, the kind of person who made an effective mentor was one who was deeply committed to environmental education, had a authenticity in both professional and personal manner and was willing to take the time and effort to communicate this to the mentoree. One final *caveat* from a respondent referred to the uniqueness of environmental education as a field and commented on the types of the leaders and mentors attracted to it.

> *I conclude that the quality of the individual and their values are far more significant than their academic prowess. Perhaps as conservation/environmental education becomes better defined, it too shall loose a certain 'magic' quality.*

Lest we lose heart for the possibilities of mentoring, an older respondent who was also a mentor offered hope for future leaders who are drawn by the 'magic' of environmental education.

> *When I was a teacher of young children and now in my retirement, I have been told many times that I 'inspire' that I pass on my enthusiasm to bring about awareness. So I must be a mentor. I have no work at my age (72 years) or wish to take on any more than I already do and have. In fact, I have been letting go some of the reins as it were, and encouraging younger people to take over, except in certain areas where I feel my expertise is necessary.*

In order to understand the whole story of a mentoring relationship and how that kind of experience might 'cascade' to others in environmental education, one needs more detail than can be conveyed through statistical data and a few lines of open comments. Drawing on the analysis informed by the survey, the narration of interviews will highlight the contextual background of the mentorees and mentors, their initiation and development of interest in environmental education, their professional development and their leadership roles. Most importantly, these 'stories of inspiration' between and among the pairs, triads, chains and webs of mentorees and their mentors will form the substantive data of Chapter Five.

Chapter 5

Full expression of environmental ethics may require
lifestyle provocateurs - mentors
who subtly challenge the deeply held belief systems of mentorees.
Carol Fortino 1996

5.0 Introduction to the Interviews

Chapter Five uses interview data to elucidate various themes from the survey which were presented in Chapter Four particularly the initiation, development and sustainment of the mentoring relationships on both personal and professional levels. Four cases are organised according to different mentoring patterns called pairs, triad, chains and webs. Each case will be illustrated by several records or stories of the mentoring relationships. The records are based on thirty interviews held over a three year span in the United States and Australia and also refer to nine other accounts of mentoring told second-hand by some of the participants.

The relationships among the mentors and mentorees are categorised using the researcher's 'construct of terms' - hyper mentor, supra mentor, prime/pivotal mentor, alpha and beta mentorees - which was explained in Chapter Three. The terms do not imply any hierarchy of importance, but merely serve to position the participants in the various mentoring stories. The narrations will also provide some 'contextual background' of the participants, that is, information about the person's personal history including childhood to adulthood and his/her professional career from student to leader.

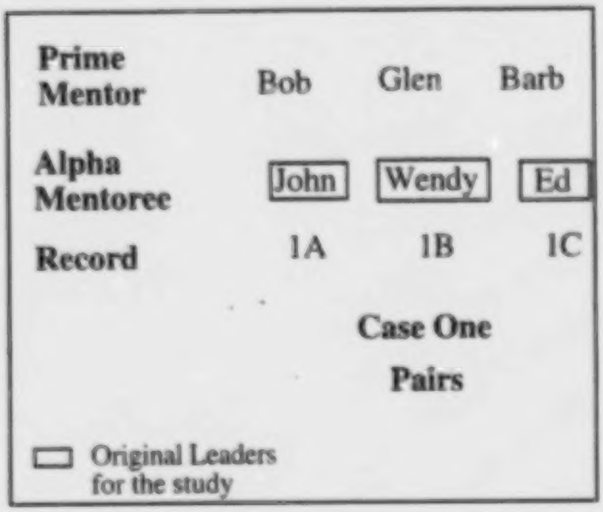
The format of this chapter will consist of the mentoring stories followed by an analysis of prominent themes. The data will highlight different events, actions and indicators that point to major categories of mentoring which have been tracked through the various relationships and will examine any discrepancies which are uncovered. The analysis will

300

explore the hypotheses which could explain the relationships among the categories and illustrate how representative these were across the samples.

5.1 Case One - Pairs

Case One will present three records of relationships between alpha mentorees, that is, original leaders chosen for the survey, and their prime mentors, the persons who were nominated as the most important mentor for the leaders' career in environmental education. This is illustrated in *Figure 5 1*. Each record portrays different gender patterns, working associations, and timings of the career influence of the mentor.



Prime Mentor	Bob	Glen	Barb
Alpha Mentoree	▭ John	▭ Wendy	▭ Ed
Record	1A	1B	1C

Case One
Pairs

▭ Original Leaders for the study

Figure 5.1 An illustration of Case One - paired mentoring relationships.

5.1.1 Record 1A- John and Bob

Born in small Colorado towns, John and his mentor, Bob, shared similar childhood backgrounds. They grew up in families who enjoyed outdoor activities such as hunting, fishing and trapping. Both had set their sights early on a career in Wildlife Management. Bob remembered that "from the time I was a small child and realised that you had to have a career goal in life, I always wanted to be a wildlife officer," while John recalled:

> *Through the years my parents became friends with the local officer, at that time they were called game wardens in the early seventies. So he became a personal friend of mine ... He owned a ranch up in the mountains and I would spend the summers working for him suffers ... I had the opportunity to ride around with him getting to learn his job. I thought that's what I want to do.*

Both Bob and John graduated about five years apart from the same university which trains most of the wildlife biologists in the state. They were one of the few pairs of mentors and mentorees who worked in the same organisation, the Colorado Division of Wildlife. John met his mentor, Bob, as a young intern, fresh out of university trying to get a foothold into the organisation. He recalled:

> *The field I am in is just so competitive that you have to have an edge. And the only way to get an edge to be hired permanently is to get a lot of field experience. Subsequently I took an internship, Essentially I worked for three months without pay (board only). That led to a lot of experience, habitat manipulations, helping the officers with law enforcement. So when I actually sat down to take the examination, I was far and away better than a person just stepping out of college.*

Bob realised that the intern program drew a certain type of personality, one where dedication to natural resources was seen as more important than money and material things and he observed this in John.

> *All one has to do is be around John to see his personality and his ability to communicate to people, plus the dedication that he had to the resource. I saw a lot of me in him, in the sense that he grew up with that same feeling about wildlife and natural things, you could see it through his family. Because of that we struck a bond of friendship that was pretty important to me and I hope to him.*

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Because of this bonding, Bob was willing to open up his network of people to John. He stressed the need to be able to communicate your ideas and always introduced John as a respected part of the team. He recalled, "I took him to a five state game warden association meeting one year, maybe that is guilt by association, but people often see that if they accept me, they are going to accept him". John expressed this personal affinity as well when he described Bob:

> *His outlook on, not just the job, but life in general. He is a truly honest person. He cares about the wildlife resource and the people who are involved with it. You can work a job and make money and feed your family, but if you are ever going to make a difference, it has to come from the heart. I'm sure that's the way Bob is. If something is not right, he will tell you about it.*

Bob not only set up professional expectations for John, but also opened up personally to explain the need for a balance in this job especially in regards to families. Bob disclosed that, "Everything I have done in my life basically has pointed to being a wildlife officer, sometimes your family life suffers, but as the family grows older, they realise why we are doing what we are doing and it makes it a positive, I think." John got to know Bob's family and remarked, "He has a pretty happy family life (speaks of kids and wife). I think that had a lot to do with my philosophy. You could be happy professionally and have a personal life as well".

When a position opened up six months later, Bob suggested that John be hired. Bob delineated his reasoning for wanting an officer with similar philosophical attitudes:

> *I think my desire or passion ... for environmental education stems from the fact that the area that I was assigned to is a very difficult area. Wildlife officers had never stayed in that area more than two years average. It is a rough area, there seems to be some animosity towards the Division and wildlife officers and that was something I had never run into before. I had always looked at wildlife officers knowing them as I grew up as someone to respect and look up to.*

Bob explained that one of the problems was the local attitude that wildlife was there only to be utilised. This led to a lot of poaching and life-threats against the officers. He reasoned that if he didn't invest a lot of time, the people wouldn't respond to his programs which aimed at explaining the "biological background of animals that were in the area and some of the special things that these animals do and have and making people realise that we are not superior just because we are humans". Bob felt that having a passion and a strong emotional tie for what you believe in, comes across much more credibly than just having words written on paper. John described how his mentor put this philosophy into action:

> *Bob feels real strongly about education and working with the students. ... What he found was that if he could work with the school children, that is the way to reach the parents. If, in turn, that student goes back out into the environment with his father, the student can say you should do that and say why. That will make more of an impression on the adult than a wildlife officer walking up and handing him a ticket to either appear in court or to pay a fine. ... In fact, you have educated a couple generations ... As we go along to students who are growing up now, we need to be aware that some of the decisions that they make will impact wildlife and wildlife resources and they need to be aware of the pros and cons of what they do.*

John obviously picked up some of Bob's philosophical passion for environmental education which came across in his definition of a mentor.

> *A mentor in environmental education can utilise the wonders of nature to develop an environmental consciousness through better understanding the delicate ecological balance. The wonders of nature are limitless and utilisation of those by an environmental educator can guide the student to pursue intelligent and constructive actions in many other areas not related to the environment or natural resources.*

Bob agreed with John's definition, saying that 'If I see that same love for the job that I have, then I will give them everything I can ... I think John has proven it to me year after year. Your grasp of him as an environmental leader makes me feel real good because obviously he did the right thing". Over time, their relationship developed into a friendship and Bob delineated some of the reasons:

> *He is the type of person who is kind and respectful and he was open and you could communicate with him. John was always one who has a tremendous sense of humour. To be honest with you, and this probably shouldn't be a factor, but physical size is important to me and John is six foot eight or whatever he is, and that opens doors because that is something unique to people. When little kids look up to John they see him as larger than life and right off the bat they are in awe. And when he gets down and can talk to them on their level, then he has made a friend for life right there. And people will always remember that I was contacted by this wildlife officer, this huge guy, but he was just so friendly and nice and helped me.*

The relationship has undergone a change from novice/mentor to colleagues. John said he no longer is just gathering information and asking questions, but now gives new information to Bob. He explained, It feels good a lot of times, because you can give something back." Although John moved on to his own district, the relationship between the men continued and their work allows them to be in monthly contact. Bob described their current relationship.

> *You always think of yourself as a mentor or whatever you want to call it, simply because you have maybe more experience than he does or you taught him this or worked him through that, but I see him as a colleague, because he is a professional. He certainly is not intimidated by things that come up be it law enforcement or educational challenges that he faces. I see it now as a colleague relationship. Still a friendship and I hope one of mutual respect. I certainly respect him for what he has done in some rather difficult situations in so far*

> *as working conditions. He has tried to develop some things from the ground level.*

John and Bob, as Wildlife Officers, are caught in the dilemma of carrying out the law enforcement side of their jobs and balancing it with their perceived needs for environmental education. They agreed on the need for stepping up their environmental education program, especially in this time of decreased school funding. Bob suggested that a positive step would be for supervisory personnel to become more in tune with the educational process. He stated, "Not everybody can go out and give a school program, we have guys that talk over their heads or aren't interested in the little kids or they don't know how to talk about different things to different people".

John's environmental education leadership has moved beyond his mentor's in that he has created a new program called, 'Pueblo Youth Naturally' which he described.

> *It's always easy to start something, but it is a lot tougher to continue something and then try to make it better ... we have a curriculum that is basically working real well. We are leaning more toward students who may be dropping out of school or students who for one reason or another don't have those opportunities - minorities, women students. When you target that group, you also create some other problems.*

Bob applauded the work John is doing saying "the longer Johnny goes, the more positive things I see in him. His confidence has increased greatly with time. The work he is doing in environmental education is fantastic. He is a consummate professional, and I see us hopefully as colleagues". John explained what keeps him going in environmental education.

> *The thing that keeps me at it (sometimes you get real frustrated) is that at the end of the day when you go home or off duty and you reflect back on the day, especially if you are spending an overnight with these students and you can tell that you have made a difference in the way that the see things or the way they*

> *feel about things. I think ultimately, that is the satisfaction that keeps me going. When you have somebody who recognises you, it may be next year or two years down the road and they can remember your name, you know that you have made an impact on their life.*

Bob also explained why he is still a strong proponent of environmental education commenting, "That is the nice part about it, my dad got to teach me, and my grandad got to teach him and his two brothers, but I get to teach hundreds of kids so I can expand that base a little bit".

In asking John what he might say personally to his mentor to acknowledge this nine year relationship, he replied, "You know, now that I'm thinking of it, I'm not sure that he is aware of how thankful I am for the time he spent with me. I think he somewhat knows that, but it is pretty tough just to say thank you". Bob replied:

> *I guess I have a difficult time of putting myself in place as a mentor, because Johnny has those abilities. I didn't do anything that wasn't already there ... maybe he just saw some things in me that he liked or didn't like and could pattern himself that way.*
>
> *The benefit for me is that everybody likes to be acknowledged for doing what they really care about. When John told me that he had been picked as an environmental leader and mentioned me as a mentor, that was a very special feeling for me. It showed a respect that I didn't realise was there, quite honestly because he got the job and we became colleagues. I didn't realise that he considered me a source of his professionalism and that is very, very special to me.*

Case Record 1A illustrates an acknowledged mentoring relationship. It began early in John's career due to an affinity of personalities as well as common interests from their family backgrounds. The relationship developed due to both professional and philosophical agreement not only in their career responsibilities, but in their dedication to environmental education. Modelling the style of his mentor, John advanced in the necessary communication skills and teaching abilities which complemented his own scientific background to take on leadership roles beyond his job requirement. The acknowledgment of this mentoring relationship gave the mentoree a chance to express his appreciation for the support and encouragement of his mentor and allowed the mentor to affirm that his mentoree is now a respected colleague.

5.1.2 Record 1B - Wendy and Glen

Wendy is a primary school teacher in Australia whose early awareness of the environment was engendered by her parents' interest in gardening. This was fostered by a secondary teacher of whom she said

> *When I got to senior biology in year eleven, he was just so interested in the subject himself that the teacher made everyone else interested. I enjoyed that. I enjoyed learning how plants and animals did things, rather than just appreciating them. I guess he got me going.*

Wendy, described as a self-starter by her mentor, showed that characteristic early on. While she was a pre-service student, she took science classes whenever she could. This was as unusual then as it is now according to enrolments figures for primary teachers in science courses. Yet, despite her personal interest, she described her first involvement with environmental education with a bit of irony.

> *Actually, I think I have been conned into environmental education. I was out during my first year and a woman from the Project Club said we are going to get a club going and you can do it.*

As Wendy transferred to other schools she kept establishing gardens with her students, aviaries and then a complete nature area. Wendy took a practical approach to environmental education. She spoke of a funding hierarchy in environmental education which consists of people with knowledge and degrees who "seem to be the ones in their white collars and ties while the others are out there in their workboots". Needing to know more about a kids-hands-on approach to environmental education is one of the reasons why the relationship with her mentor, Glen, was initiated.

Wendy had been friends with Glen's wife and had heard of his exploits. Glen had grown up in the bush where, as a child, he had bred and released wildlife. At university Glen studied music and art and it wasn't until he was a home owner himself that his interest in the environment was revived. At the same time, he was a young primary teacher assigned to a school whose ground cover had been totally destroyed leaving the children with harsh windy conditions and no shade. With the encouragement of his principal, Glen developed an environmental study area and did some interesting work with a Mudgeroo Project where his students did research for an Aboriginal food area and then published a booklet. Glen described his early approach to environmental education.

> *I found it was a good way to get kids involved in all sorts of integrated activities in language and drama, in art especially, and social studies and science.*

By the time Wendy met Glen, he had moved from being a teacher to a regional environmental education consultant and then to his current job as principal of an environmental education centre. When she visited his home, his extensive gardens were an immediate link. Also, she was taking a horticulture course to advance her own knowledge. When she called Glen for some help on the identification of plants, their conversations led naturally to practical environmental education projects for schools. She described his advice and encouragement, thus:

> *I remember I rang him up because I wanted to set up a fish tank and I wanted to know how to do it. He was just prattling on and he said, 'You know when you clean the goldfish, don't put them in the drain or anything because they destroy native habitat'. I had never thought of that, little things like that.*

Glen summarised the similarities in their practical approaches to environmental education in this statement:

> *When I think back we had an open area classroom and my end of the classroom was like a menagerie. We had fish tank, tortoises, crayfish. Inside the classroom we were breeding fish. Kids took them home, we were releasing local fish back into the creek. Kids were establishing their own aquariums, we had an aquarium club running, we had a bush walking club, we had a fishing club and we had the nursery and the environmental education area. And when I think about it, Wendy has gone down a similar sort of track. She has this huge environmental area, she has a project club operating in the classroom, she has breeding finches,*

> *breeding frogs and she has moved out into the local community.*

Glen described his mentoree's personality, saying, "I think with Wendy you don't have to give her a lot of information. She will just run with a spark and then develop it herself. I do know that she, like myself I suppose, is always after a new direction periodically. She is a self-made, professional person who runs with ideas and adapts them to suit her own needs". Wendy's interest in professional growth had led to Glen sharing his network contacts especially those which could give her new funding sources.

Wendy's leadership abilities were recognised through winning the 'Tidy Schools' competition and her involvement in a wider project, 'Keep Koalas in Our Community'. She described her current activities.

> *I'm helping to coordinate that one. It is a big community thing. That is how I have led the staff, but I think most of it is leading the kids. If people have a sick bird or animal, they come and see me. So maybe my leadership is more subtle. They see that I am the environment person, so you go and see Wendy and she'll fix it.*

Wendy said of her mentor, "Glen had kid-based programs and I think that was a philosophical thing we agreed on and both believed the kids have to do it". Glen remarked, "I think quite often she might ring just to confirm thoughts or reaffirm or set something that might not have been set before. Just to assist her thinking, to clarify her thinking. I don't know if it is direction setting, but it is certainly assisting in giving opinions". Glen explained his own shift in environmental education philosophy over the years.

> *Originally it was educational. But, in the last ten years I have seen that children seem to be losing touch with their own environment. They don't feel as though they can have any impact. They don't feel as though they are empowered, so I have really felt that in the last ten years, my biggest goal has been to try to give kids the sense of empowerment, of achievement, that they can actually do something, that they have some sort of*

> *control over the future and that they are the decision makers for the next generation. I really try to keep that foremost in my mind. I suppose in the last ten years I have had a shift of focus, more philosophical.*

Wendy deferred to her mentor when it comes to a philosophical approach saying, Glen "eats and breathes environmental education", but her own words illustrate her evolving position.

> *There wasn't even environmental education when I started, it was just doing gardening ... It is being environmentally friendly, whether it is planting trees or driving unleaded cars, just caring for nature. Developing an attitude within the kids, like the big bearded dragon on the path and the tone of the kids as they just looked at it and said, 'isn't he beautiful'.*
>
> *I know that I talk about it now. I play golf and the ladies know that Wendy is into environment and if you want tadpoles, Wendy will get you some. I guess I am not embarrassed to share it with people. Glen helped by giving me the praise, the encouragement.*

The effectiveness of the mentoring relationship is noted by Wendy who claimed that Glen had substantial influence on her personally and on her career. She wrote on her survey:

> *As he generated an interest for me that has lasted twelve years and brought me considerable personal and professional rewards, I guess he has changed my direction in life.*

Like John, Wendy felt that now she can discuss and initiate more than listen, that she is an equal in some areas of knowledge, and importantly, that she has gained her "mentor's respect as a leader". Glen described their on-going relationship.

> *I speak to Wendy regularly and we have this common interest and, of course, I give her advice all the time, but in the process I get things back from Wendy. She'll be able to tell me the strategies that she has employed and*

> *I'll think that is pretty good and I will consider that and tuck it away in my memory or maybe it will channel me off in another direction that I might want to take. There is a bit of professional sharing .*

On her survey, Wendy had defined a mentor as:

> *someone who inspires you to grow professionally and personally, cares about what you are doing, listens and encourages, remembers you and what you are doing, someone you respect for environmental education, their credibility, innovation and knowledge.*

Glen seems to have fulfilled these functions for Wendy. When she called to say she had nominated him as her mentor, she recalled that he said, "'But whenever I talked to you, you knew what you were doing and where you were going'. Isn't that nice to hear. We ended up talking about this tape he had on frog noises. I was rapt. See this is what this [mentoring] is all about. Who else can I talk to about a tape of frog calls and they don't think I am mad!"

Both Bob and Glen recognised the potential in their mentorees who were self-starters and able to take ideas, adapt them and move their leadership into new arenas. Wendy, being mid-career when she sought out Glen's advice, was more certain of what she wanted from her mentor, while John modelled behaviour that seem appropriate for him at the beginning of his career. Through the years the associations with their environmental eduction mentors have allowed John and Wendy to grow both personally and professionally.

5.1.3 Record 1C - Ed and Barb

Record 1C reports the mentoring relationship between an older male who was in his later career and his mentor, a woman ten years his junior. Unlike Wendy and Glen who are Australian and John and Bob who are from the United States, Ed is unique because over the years he has spent time in environmental education in both countries. Of that experience he commented:

> *I did go to Australia where I was active in several different outdoor education camps that were associated with the school that I taught for. I got real involved with the way Australians do their camping, building it right into the curriculum, taking the kids to the environment, instead of trying to bring the environment to the kids.*

Now a high school biology teacher in Colorado, Ed continues to take students outdoors and has begun a special environmental education program. These activities reinforce his philosophy that "the environment is very, very important to me. I have been an outdoors-type person all my life and I can't see teaching biology and preservation and the observation of life without having the students explain and be out there and be amongst it". As part of his new course, he became involved with *Project WILD*, an international curriculum on wildlife, and after several years became a facilitator. He described his transition to teaching adults.

> *It became a real important stepping stone as far as getting out and sharing what some people would call expertise with other teachers who would be willing to take on environmental education as part of their prescribed job.*

Ed had been interested in setting up a water watch program on the nearby Yampa River as an enrichment for his school biology classes. The state coordinator of *Project WILD* was able to provide the equipment and Ed called it 'a natural marriage' of the two programs and reported, "I have become a real strong advocate of that program since we were the initiating school".

From there Ed and his students have been actively involved in *Project WILD* and River Watch Network for the last five years. That was when he met his mentor, Barb, who was the head of River Watch and trying to create a program that would be acceptable schoolwide and statewide.

Like Ed, Barb described her early interest in ecology, "I have always had a love for the environment and especially rivers and water. As a kid, I did the typical science outdoor type things and knew that is what I wanted to go to school for". Barb ended up working through the university geography department where she earned degrees in both biology and environmental economics and later finished a Masters degree in aquatic biology. Like John, she was a temporary employee of the Colorado Division of Wildlife before obtaining a permanent position four years later. She described her present job as follows:.

> *It is very challenging field because of the issues that we have to deal with. You have to be very resourceful and you have to come up with creative and innovative ways to deal with the situations and to protect our legislative mandate of protecting aquatic organisms in state waters.*

She explained her leadership style, saying, "I find myself, over and over, being labelled a leader although I would never come out and would say it. It is my personal philosophy that when you are doing projects, again, I have a very team philosophy about life, it is fun to take on projects and have no ownership and to get to an end point". Although working in an hierarchical government organisation, Barb maintains that, "hierarchy isn't even in the vocabulary of the ultimate goal of environmental education". Ed also commented on her leadership style.

> *So leadership, I think, is just one of those things that happens, but is not a planned activity. I think that a lot of people are willing to share their ideas, their concerns, their concepts, their programs, and it makes that aspect of leadership very personal. It is real interesting to see that people, such as Carol and Barb, the head of the River Project, are so personable. They do care about the person and their program rather than selling their concept.*

When it came time to implement the training programs, Barb asked Ed for his help. Ed remarked, "At that point in time I was quite honoured to think that Barb thought enough of me to ask me to become part of that training program." This new opportunity required time off from Ed's school district which, unlike secondments in Australia, is very difficult to obtain in the USA. Barb explained Ed's dilemma:

> *It has been interesting working with him, because despite his lack of support in his own building, he continues to fight the big fight, much like myself, because he believes in what he is doing ... An example would be, he knew he was going to get into trouble just requesting from his principal to come and help me teach, three of my workshops, to miss three weeks of his school and we figured out a way to buy him off, to buy his school a computer. I am sure he had to deal with the wrath of his principal for the whole year after that.*

The relationship between Barb and Ed developed as they carried out the training programs for other teachers. Barb recalled, "I knew what needed to be done technically, but had no idea how to get it into the classroom. He knew what he wanted to teach and he just needed somebody to give him the tools and the structure to teach it. So we just started feeding off each other". Barb sketched the development of the mentoring relationship.

> *But he believed in it so strongly and it made such a difference to the program. His drive, his push. I'm sure it was a give and take. He probably fed off my energy without ever sitting back and identifying it ... I never would have guessed that five years down the road we would have the relationship that we have now - the friendship or the professional interchanges that we have. I don't even know when it really started clicking. He has been a wonderful guinea pig. I must have made thousands of changes those first years ... And I think maybe, although I have never asked him this, he has watched me grow. He has seen the program go from those two hours sessions to these big workshops. He sees forty or fifty people at a workshop all inspired to go*

> *home and take care of their river and share that knowledge. Probably without putting it into words, we are both so inspired by that.*

For Ed the personal friendship which has developed is an important aspect of the mentoring relationship and can be seen in his remarks, "She is willing not only to talk business, but is truly a friend and is concerned with my personal aspect of, not only of the program, but also of environmental education". Ed felt that Barb had widened his people and resources network and that "she has allowed me to evaluate different careers that might not have to do with teaching per se in the classroom". He might even consider leaving teaching to become a member of the team at Division of Wildlife saying, "I really do owe a lot to Barb in that area". Ed described a fellowship that he feels he has gained through his mentor, "This mentoring process is real valuable to me in that it has created a network of friends who are concerned about the same things that I am concerned about". However, Ed had no trouble distinguishing the role of mentoring from networking when he stated,

> *But a mentor is, in my concept, a person who will share with you, who will work with you, who will evaluate what you are doing and will allow you to evaluate what they are doing. That is what I see in Barb. The network is just one of those side-line benefits that would come from that mentoring process.*

Ed continued his own philosophical critique about environmental education stating, "I really don't believe that many people that I associate with in environmental education have just one method, one presentation style that will work in every case. I'm constantly rethinking, re-evaluating what needs to be done. Where are my students coming from, what ideas do they have, what needs to be incorporated into the program to enhance those ideas?" Ed increased his leadership activities by starting an offshoot program called the Classroom Aquarium Project which is a cooperative project with the Division of Wildlife to keep native species in classroom aquariums. The new program verifies water quality through River Watch, but also ties it in with healthy animal life, good habitat and good resources. Ed explained his mentor's reaction to this new development.

> *She has been real supportive in that, she has evaluated my materials, she has given me resource materials, and she has been extremely supportive of the fact that I can take the River Watch Program and do a different application of that knowledge. And instead of feeling threatened that I was creating another program that would be in competition with her program, she has become very supportive ... I find that extremely rewarding, the fact that she is concerned, not only about our River Project, but about any other projects that we can create from this spinoff.*

Even though Ed had no hesitancy of putting forward Barb's name as his mentor and rating her as having 'substantial influence' on him personally and on his career, when asked if he had acknowledged this role of 'mentor' to her, he said:

> *I think she would almost be to the point of being embarrassed because of the fact that we have never actually shared the concept of her being a mentor for me ... because I don't think Barb has that impression of herself that she is doing anything that is all that earth shattering ... I would probably say something I need to say to her anyway and that would be thanks for all the encouragement. She has been a very, very important encouraging factor in my field of environmental education, not only just the river program but for any of the other programs that we have shared ideas on ... How to work through the controversies of certain environmental education issues. I would thank her for doing that and for being there when I needed her.*

Barb's opinion about being designated as Ed's mentor showed a reciprocity in appreciating the qualities of one another. She described it as follows:

> *It's funny because if somebody had given me the question of who I think a mentor is, I would have reciprocated Ed's comments about him. He has been a mentor or inspiration to me in this project. That is why I*

> *was surprised when you told me it was him. I kind of call him the father of River Watch in Colorado, because he was the teacher who wouldn't let us say no ... He is an incredible guy. Always willing to try something, He is so sincere, you just feel like you are one with him, that you are communicating with someone who believes personally and professionally in your goal. ... The creative forces that come out of that process are empowering and they last forever. I never thought that I would have this relationship with Ed, but we really do feed off each other. He is an inspiration to work with.*

Barb admitted she never consciously thought about the mentoring process, saying, "I guess I have never sat back and said, 'hm, I'm mentoring'. I have never labelled it or identified it. It seems more of an equal, having somebody there, I don't know if 'support' encaptures the whole thing, but the freedom. It seems to open up the creativity processes and the brainstorming". She summarised the benefits of being a mentor for herself:

> *Ed reminds me everyday that he makes me believe in what I am doing and that he is reaching the kids and the students and I have helped him do that and he has helped me better my relationships to help somebody else. It makes me feel good about what I am doing, That I make a difference and I feel like I am important. It is a reason to come to work everyday when you have a relationship like that.*

When asked if he was ready to become a mentor for someone else, Ed pondered that first he would need to feel that he had something worthwhile to offer, but if so, he'd "be completely tickled and honoured to be thought of as somebody else's mentor in this whole process". Through his own mentoring experience, Ed seemed cognisant of the responsibilities and commitment it takes to become a mentor.

> *I can teach a program to students, but to share that program with somebody else (adult mentorees) brings a complete different understanding of the importance of that program. I would have to reevaluate my program*

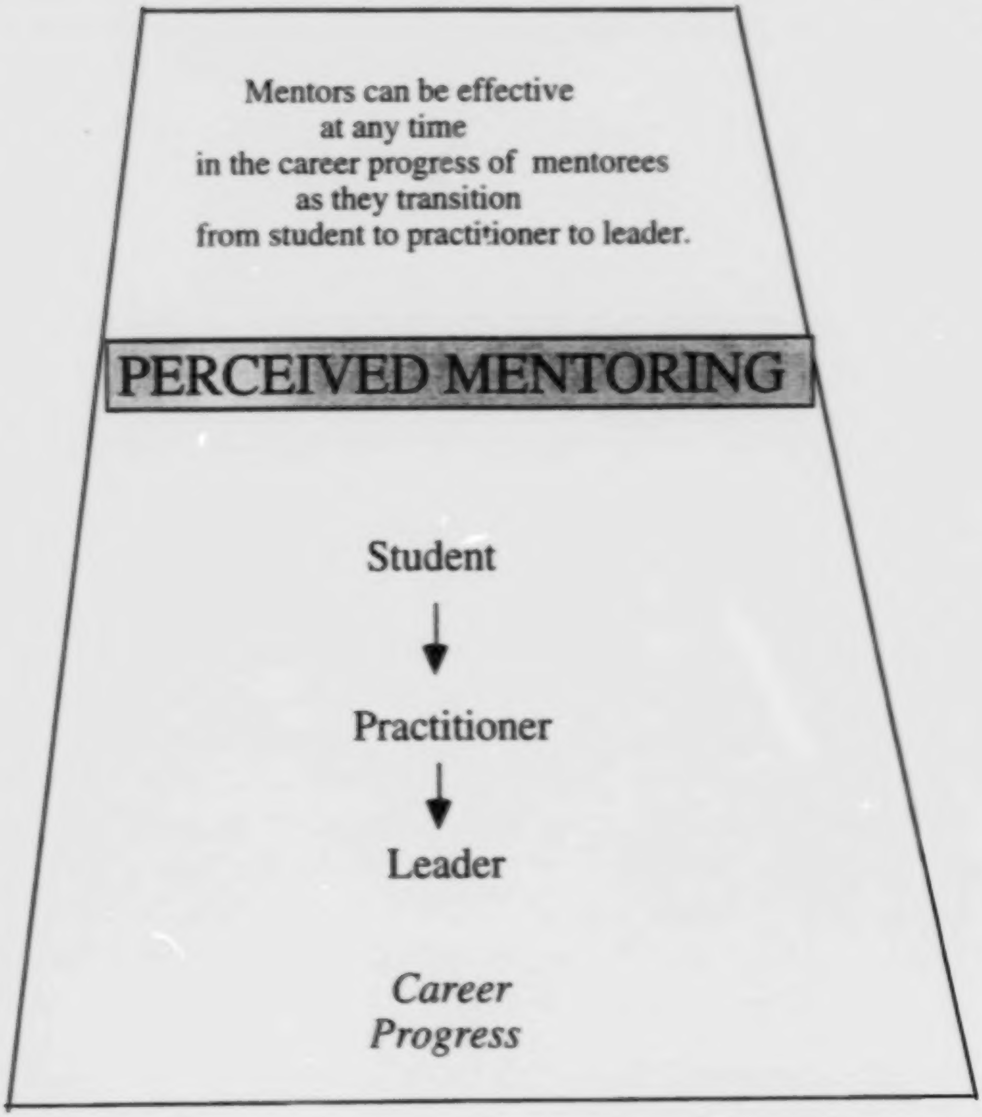
> *from a leadership role and not from just a presenter's role. I would find that to be a benefit to me. It would force me to rethink, reevaluate, redesign some of the points of the programs that I have either created or have used myself.*

Barb and Ed have one of the shorter mentoring relationships in this study, due to finding each other late in Ed's career. In speaking of this, Ed reasoned that we have to establish our own beliefs, our own concepts and goals and "so it [mentoring] would become a later in life program instead of being something that would happen right out of college or possibly even while you are in high school. I don't think the beliefs or the goals and needs are there then". But later in our careers he thinks, "we might, not so much intentionally, go out and find new people with those same beliefs and goals, but through the different associations we belong to and the different programs that we work through, I think mentoring just become a natural offshoot of that".

The record of Ed and Barb highlights differences in age and an unusual gender pattern; they work for two different organisations which have different policies regarding professional development; and they met each other fairly late in Ed's career. Yet, as they both reported, none of these factors seem to impact negatively on the effectiveness of their mentoring relationship.

5.1.4 Commonalities within the Records

Case One has highlighted certain events, incidents and action of the mentorees as they move in their career path from student to practitioner to leader as shown in *Figure 5.2.* The researcher has summarised this stage with a first proposition at the top of the diagram. Their interactions with the mentor pointed to major categories termed 'initiation' and 'development' of the relationship and the idea of 'acknowledged' mentoring. The impetus for the relationship stemmed from a spark of attraction between the pairs due to the 'self-starting' personalities of these three mentorees.



The Mentoring Experience of Leaders in Environmental Education

Mentors can be effective
at any time
in the career progress of mentorees
as they transition
from student to practitioner to leader.
PERCEIVED MENTORING
Student
Practitioner
Leader
Career Progress

Figure 5.2 Career progress of mentorees.

They described a shared philosophy regarding environmental education which for John and Bob was their dedication to wildlife management, for Wendy and Glen the hands-on approach and kid-based involvement with environmental projects and for Ed and Barb the in-service training for a new water quality testing program. The relationships developed as levels of trust, support and respect were increased leading to personal as well as professional relationships.

5.1.5 Comparisons across the Records

Certain themes have been highlighted in each record of Case One such as gender, initiation of the relationship, workplace and effectiveness. These are compared where appropriate in matrix form in *Table 5.1.*

The records illustrate a variation in the times when mentorees met their mentors - John was a young intern, Wendy a mid-career teacher, and Ed late in his established career. There were differences in the working relationship as only Bob and John worked for the same organisation in the same town and later in the same region. Although Wendy and Glen are both in the Department of Education, Wendy is a teacher, while Glen is a principal of an environmental education centre and they have never directly worked together. Barb and Ed do not work for the same organisation, but occasionally do training on the same project .

These three records have shown three distinct gender patterns - male to male, male to female and female to male. Differences in age patterns are also highlighted with John being younger than Bob, Wendy and Glen near the same age, and Ed being ten years older than his mentor Barb.

For these participants, the variations in age, gender, career timing, and workplace opportunities are seen as externalities which have little bearing on the effectiveness of their mentoring relationships. What is important, is the philosophical congruence, the professional and personal relationship that develops, and the tangential benefits such as increased networking and the creation of spinoff programs.

Table 5.1 Comparison of themes across Records 1A, 1B and 1C.

CASE ONE	THEME	THEME	THEME	THEME
Pairs - Prime Mentor and Alpha Mentoree	Gender Mix	Initiation of the Mentoring	Working Relationship	Effect of Mentoring
Record 1A Bob	male to male		same natural resource organisation	
John		early career	worked together	assumption of leadership role
Record 1B Glen	male to female		same education department	
Wendy		mid-career	never worked together	ethics to action
Record 1C Barb	female to male		different organisation	
Ed		late career	occasional work together	increased networks

The autobiographical details of the mentorees presented in Case One provide insights into the research questions. A beginning proposition can be established grounded in the data, that is, a mentor in environmental education can be effective at any time in the career progress of a mentoree as they transition from student to practitioner to leader. Although the mentors in Case One were able to verbalise the benefits of mentoring for themselves and their mentorees, they reported that they did not have a significant mentor for their own career progress in environmental education. Case Two will examine two relationships which go back to the mentors' 'supra mentors'.

5.2 Case Two - Triads

Case Two will trace the mentoring relationships between two original leaders or alpha mentorees and their prime mentors as depicted in *Figure 5.3*. During the interviews with the prime mentors, second-hand stories were related about their own mentors, who are designated, 'supra mentors'. Each record provides details of a 'mentoring triad' which will broaden the answer to the research question regarding the timing, development and duration of mentoring relationships.

Supra Mentor				*Prof U*	*Orin*
Prime Mentor	Bob	Glen	Barb	Dr. Gordon	Ivo
Alpha Mentoree	John	Wendy	Ed	Richard	Sally
Record	1A	1B	1C	2A	2B
		Case One Pairs		**Case Two Triads**	

▭ - original leader

italics - not able to be interviewed

Figure 5.3 A comparison between Case One and Case Two

5.2.1 Record 2A - Richard, Dr. Gordon, and *Professor U*

In trying to understand the environmental education network in Queensland, the researcher attended the Fitzroy River Catchment Symposium in 1992. While there, certain names came to the fore and one of those was Richard's. He was chosen as a leader because his efforts in environmental education take him beyond his normal job requirements as a natural resource personnel working in the Department of Primary Industries. He volunteers a lot of his time to educate farmers about ecological systems and is providing extra training to his co-workers about facilitation and communication skills to enhance their work with local community groups.

Originally from South Africa, Richard nominated his mentor, Dr. Gordon, whom he has known for twenty-five years. It was a fortunate turn of events that allowed the researcher to conduct this mentor interview near Pietermaritzburg in a place overlooking the Valley of a Thousand Hills. Dr. Gordon began by describing his own childhood and burgeoning interest in environmental education.

> *Well my own involvement with natural history started very early because I grew up with what was then a rural area, went to a rural school and my mother was interested in natural history generally so probably that's where the seeds were sown. Then we went farming subsequently in the Orange Free State during my teenage years. Farming, that was the thing, one is close to the soil, I was working with the land and there are biological phenomena all around and inevitably one must become interested. We are a species that is exploratory, that is curious, that is asking questions.*

His avocation turned into his vocation and he studied arid zone biology, particularly the bird-desert connection. His initial degrees were in zoology and botany, while his PhD research in desert ecology led him to visit various places around the world.

When he was a beginning academic at the University of Natal, Dr. Gordon met Richard, the alpha mentoree, and reported, "I really got to know him in his third year, partly because he came to me specifically for mentoring which I think is a nice word. It describes teaching experience widely". In exploring why a student might seek out a particular mentor from among his professors, Dr. Gordon reasoned, "I think what happened in his case, as has happens in many cases, is that he just warmed to my particular teaching style." But Dr. Gordon recalled fondly, "Yes, I remember the day he came into my office and told me that he respected my teaching and he wanted to ask me some questions and was I prepared to listen".

Richard reported that the impetus for the development of the relationship was that he was looking for 'guidance' during his time in the new environment of a university setting. Dr. Gordon described the beginning process of mentoring.

> *For Richard specifically, well I'm not really sure, but I tend perhaps to have a slightly offbeat way of looking at things which means when a student comes with a problem I'm not there to offer advice but rather to ask questions in a way that will make the student look at things differently and what I think he maybe referring to is the way in which I'm able to say, 'what about this or what about that', to look at all the alternatives, all the other possibilities....*

He went on to describe a fieldtrip to Nairobi which was a turning point in their relationship.

> *We were looking at the desert, at all kinds of things biological and it more or less cemented the relationship between him and me not just in a student/teacher way but also as a friendship. I think that a lot of what passed between us in the way of relevant and fruitful teaching was based on a personal relationship, either you relate to your teacher or you don't relate to your teacher. Of course if you do then the teaching is so much more effective because the learning is more effective.*

On his survey, Richard had defined a mentor as someone, "inspirational, educational and stimulating" and he ranked 'personal concerns' as the second most important characteristics of a mentor. He prioritised the subtopics in the following order: was available for consultation, concerned with my personal matters, improved my self-confidence, helped formulate my attitudes, changed my beliefs and transformed my view of the world. Dr. Gordon commented on how he felt he met these criteria for Richard.

> *The way in which they were exercised effectively with him was that he was a very effective listener and he was*

> *a person who was prepared to try things - in that sense he was adventurous. He had a kind of humility, using the word in the nicest possible sense, which allowed him to ask questions and listen to the answers, weigh them up, either go and try it or give you a valid reason why for him he wasn't prepared to try it, but he was a very refreshingly different kind of person to handle.*

In asking if the relationship between the student and his professor developed in more collegial terms, Dr. Gordon remarked:

> *Yes, but it took a very long time because there was between him and me a kind of whole level of, I'm not quite sure what to describe it as, it was a level of achievement and a social level which he created and which he maintained until very, very recently. He wouldn't even use my first name for twenty years.*

Richard confirmed this level of formality even though he became a close friend of the family. Dr. Gordon described the attraction of his mentoree.

> *I think that his enthusiasm was always a very endearing feature and I think Sherry (my wife) will agree with me. He was enthusiastic about everything sometimes to his own detriment, but he put his heart and soul into it and for a mentor that's very gratifying, even though you can see he's going to bump his head against the wall.*

Dr. Gordon clarifies this point saying, "I think that he found that I was the sort of person he could talk to, I was a good listener and it was just that kind of relationship. He would come along to me with academic problems or personal problems and very often of course they were linked". He also recalled:

> *Richard's father was very interested in birds and, I think, Richard probably saw me as a little bit of a father substitute out of his home environment, partly because I was older than he, partly because I was interested in birds ... I think he saw in me a man who, while not a*

> *terribly macho, aggressive person, was not a shadow figure and perhaps that drew him to me.*

The prime mentor was asked, "Did you put him in situations where he had to extend his skills beyond what he thought he was capable of?" The reply showed Richard to be a self-starter like the mentorees in Case One. Dr. Gordon replied, "He was an interesting student in that I didn't have to do that, he put himself in those situations which made my role very easy and all I was in that particular case was a facilitator". When Richard was ready to pursue a Master's degree, he was working in another city with a nearby university, yet he chose to again work with Dr. Gordon.

> *That university would have been geographically nearby to a supervisor. What he did instead, in order to capitalise on what he perceived was my ability to extend him, was to choose an ornithological project looking at pesticides in the Sacred Ibis. He had a very good study area in Pretoria. Now the fact that I was in Pietermaritzburg was really incidental and I think that what he wanted to do was a thesis within the framework of his job but supervised by me, and this was the way he could make that combination. It worked perfectly well. Yes, he did a good thesis, he got a number of publications out of it, and I think he found it very satisfying.*

Eventually Richard earned a PhD in Veterinary Science and Dr. Gordon observed that "each of these steps was of his own choosing", yet Richard credited his mentor with substantial influence on his career choices and leadership decisions.

Even though this mentoring pair have been in different countries for quite some time and their fields of work no longer overlap, they still contact each other about once a year. Dr. Gordon gave his analysis of this continuing relationship.

> *Well to put it on a very personal level, Richard normally contacts us when there's a problem to be solved and that in a way is a very nice compliment I would say. ... We*

> *aren't any longer in a teacher/student relationship, but I think we are very much and probably always will be in a counselling relationship, and I think he sees us (my wife Sherry and I are very much a team) for better or worse, as very wise people and this is an illusion which he holds on to, he's created. I think he is comfortable with that illusion and he is able then to talk to us and with our listening he solves his problem accordingly, and I think this is in a way a teaching relationship.*

Richard may be modelling his mentor's intuitive educational techniques as he is currently involved with teaching other people in his division how to present material to the farmers in the field. Dr. Gordon explained his style, "For a start one must know one's subject. I think the other thing is to be a good speaker, a good communicator ... use your knowledge and be convincing to people because you know what you're talking about, and because what you are talking about is, as you perceive it, good sense".

The supra mentor - *Prof. U*

When asked if he had a mentor of his own, Dr. Gordon described two people. One he says was "a mentor in the broadest sense" who introduced him to "music, cultured people and civilised ideas". He vacillated in his decision for an environmental education mentor arguing, "people will have trouble picking one because for different times of their life, they need different types of mentors." He then recalled briefly the mentor he modelled academically.

> *At university the head of my department, Professor U was a man who had a very interesting outlook. He was a thoroughly academic person and I admired his brain power, I admired his way of looking at things. I may at times not have liked him, but I never stopped admiring him very greatly and emulating him.*

Even this short description of his supra mentor brings out several themes germane to mentoring - attraction to the mentor, professional complementarity, respect, and emulation, which is defined in Macquarie (1987) as imitating with the intent to equal or excel. The personal side of this relationship may have been somewhat troublesome, but it did not impede the overall effectiveness of the relationship. According to Dr. Gordon, this experience of mentoring helped steer him toward his current philosophy of environmental education.

> *One has to look at everything in a global context for a start, that's a philosophical approach. One has to weigh up the ethics of a situation and I think far too many people look at ethics as a purely social phenomenon, looking at ethics as the greatest good for the greatest number of people and while that may sound very noble we may in fact be only looking at the short term. We've got to look at the greatest good for the planet and that is another philosophical approach and I think that increasingly we are having to arrive at those decisions which are very unpopular decisions in the short term.*

Asked if this was a philosophy he had passed on to his own mentoree, Richard, Dr. Gordon explained, "I don't think I even entertained that philosophy myself until fairly recently, I was one of the victims of convention and one has to emancipate oneself from purely social convention in order to become an earth-being rather than an inhabitant of the city or a purely human environment".

In probing why an academic would choose only a few of his students with whom to build a close mentoring relationship, Dr. Gordon commented, "I think one is most effective in the case of those people who actually seek one's input into their lives. You can't change people, only they can change themselves, they can use you and if you see a person who is using you profitably then the relationship will work".

In understanding the importance of the mentor when the mentoree is considering career and leadership decisions, one theme stands out- the ability of the mentor to listen as a sounding board. It is an attribute which Glen described in relationship to Wendy (Record 1B) and again is heard in Dr. Gordon's support for Richard's career.

> *I think I've been minimally useful in those directions because he's a person who has made his own opportunities and that is one of his strongest*

> *characteristics. I like to think that whenever he has wanted to take a step and he has come to me to bounce an idea off. In that direction I have been encouraging or at least I've been supportive and I think that possibly one of the most important things, one must be prepared to listen.*

The mentoring cascade in Record 2A extends from a supra mentor, Professor U, who was a thoroughly academic person with an interesting outlook, to the prime mentor. Dr. Gordon, although not a trained educator, works intuitively using the guidelines that teaching environmental science "should be clear, interesting, fun and relevant". This mentoring process leads to Richard who now resides in Australia. Despite the physical distance which causes long periods of dormancy, he continues his twenty-five year relationship with Dr. Gordon. From being a young mentoree, Richard has become a 'collateral peer' working in different, but an equal status career and sharing a professional congruence with his mentor. Yet, he still exhibits the characteristics which initially drew him into the mentoring relationship with Dr. Gordon - the enthusiasm, the ability to listen, the use of his mentor as a 'sounding board' and the self-initiative to try new techniques. Richard is enhancing his leadership skills as he moves from a pure scientific approach for delivering environmental education to one which incorporates strategies from the social sciences in order to make communication more effective for the community groups with whom he works today.

5.2.2 Record 2B- Sally, Ivo, *Orin*

Sally attributes her interest in environmental education to the field classes she was involved with at university level, so it is not surprising that she met her mentor doing what she enjoyed most. In her first years of teaching, she was able to take students to the Teton Science School for winter ecology fieldtrips during the school year. Then during the summer, Sally herself enrolled in a field-based course on the ecology and geology of Colorado. This is not unusual in the USA since teachers have a long summer break and often take classes to keep up their teaching certificate, to upgrade their subject knowledge or to work toward a higher degree. Sally stated that she wanted to incorporate new information in her teaching and to make new professional contacts, saying, "I'm always interested in any ideas that would enhance any part of the classroom teaching, but probably, especially, the outdoors part".

She recalled with laughter an incident from that first summer meeting with her mentor, Ivo, a university biologist.

> *Now, Ivo, the very first summer course I took, had me on hands and knees with eye glasses counting florets of different kinds of grasses ... I find myself today in the classroom still telling the kids about grasses and that these are flowers. The kids are going, wow, these are more advanced than roses and other plants. It's kind of interesting that you can get excited about grasses, but you have to work at it.*

This initial meeting with her future mentor enlarged her view of the environment as she stated, "I thought everything that was beautiful was in the mountains. So he sort of opened my eyes to the prairie". When Ivo was asked to give his version of the initiation of the mentoring relationship, he recounted similar details.

> *It was a field class out on the short grass prairie; I did the geology and ecology of Colorado. It was at least four weeks long. That is where I really got acquainted with Sally. We were in the out-of-doors all this time, camping throughout the state. I think she had taught a year or two in Wyoming. She had much enthusiasm and*

> *that enthusiasm was catching with other students, you could see it. Sally was always excited about these things. But above and beyond, whenever I had to do anything, Sally was always there to help. She always put forth extra effort to do what needed to be done, to make things work well. Her temperament was always up.*

Asked if Ivo had initiated a mentoring relationship with other people he met that first summer, Sally replied:

> *I don't think he selected me from a group or I selected him from a list of professors. No, I just think it was a matter of circumstances, being on a camping trip for several weeks ... I think there are some people you just sort of connect with and feel comfortable with. You just sort of feel you can interact with. He was one of those. I don't think he was a mentor to anyone else in that group.*

Ivo described what attracted him to Sally, "We had become good friends. I knew her background by the end of that summer because she was already a good geologist and she built a biology background on top of that and she could deal with any of the field issues and she could deal with students in the field, or how to work with people, how to get the most out of them". Sally had decided to move to Colorado and recounted how Ivo recommended her for her next job.

> *Probably the real catalyst was when he said, 'If you're interested in a full-time teaching job in a public school, I would recommend you for that'. He said, 'You can't make a living at outdoor ed centres, so therefore you might consider this particular public school and they are looking for somebody for outdoor ed'. I still feel grateful to him for sticking his neck out when he only had that summer association with me and he recommended me for it. It didn't necessarily mean that I got the job, but it got my foot in the door which I wouldn't have had otherwise.*

Through Ivo's recommendation, Sally did more than get her foot in the door as shown by Ivo's remarks, " So the department chair decided to give her a try for a year. Well you know how Sally has turned out - one of the hallmarks of the district". She became an outstanding teacher incorporating a nearby field study area into her curriculum and writing the district outdoor education manual. She runs a special program for high schoolers who teach science lessons to elementary students. Her leadership was extended as she became a facilitator for *Project Wild* and, through the encouragement of her mentor, became highly involved with state and national professional associations for biology teachers.

When asked if she distinguished teaching environmental education principles and just enjoying the out-of-doors, she expressed her philosophical view.

> *I think that they go hand-in-hand. I think just knowledge and experience and love of the out-of-doors makes you incorporate and internalise some of those principles. I suppose also having some of the principles makes you a better user and more responsible user of the out-of-doors ... I think probably anybody who works in outdoor education feels philosophically that they are caretakers of the environment in their daily lives and not just professional lives ... I kind of interpret that to mean education philosophy.*

Sally noticed this same kind of philosophical approach to outdoor/environmental education in Ivo. Even today she emphasises that "the qualities that I admire in him are his leadership qualities, his ability to work with people, his ability to, kind of, make things happen. His expertise in the field, getting people out, working together and just thinking and talking about things, I thought he was really good at that". Ivo described what he felt were special ties for a mentoring relationship between environmental educators.

> *First, we have to have a common interest, and environmental education supplies that common interest as far as what you are doing here. We are interested in the out-of-doors and all of those factors that are associated with it. We are interested in people, in*

> *relationships and each other and sharing. It is more than just a friendship because it has a professional tie-in because we sit and talk about things.*

Over the years the student/teacher relationship between Sally and Ivo has changed. Ivo explained how he challenged his mentoree.

> *I think the thing that really stands out when I look back over the years is our professional involvement with biology teachers. I pushed Sally a number of times because I knew she could do it. There was nobody there really to push her because her father had died. It had been all self-motivation which she is very good at and she had done very well with it. But I pushed her to do other things, like to get her master's degree. She had taken all these courses which she loved to take, but she was late in getting a Master's degree, but she finally did.*

This mentoring relationship has been sustained over twenty years and Ivo sees Sally as an equal. He commented, "She is a professional. I have invited her to come to the strategies class that I taught here for many years. She was always part of the team. This was for pre-service teachers to tell them what it was like out on the frontier of teaching ... So I think we started the collegial relationship early in that I would seek advice from her and we would do things together". Sally described this development from her point of view: "It became a colleague relationship primarily associated with professional meetings in most cases, but I still considered him a friend, not just a colleague".

Ivo also spoke of this friendship, "Sally also suggested things that opened my mind to travel because she is often going places ... I have sought Sally out on many occasions for advice and to do things for enjoyment as much as anything, dinners, going on hikes together, skiing, the trips down the river". Sally and Ivo continued their professional work together taking several raft trips down the Grand Canyon to study geology and ecology.

> *I guess Sally is my kind of person, she is the kind I would want to ride the river with. That has a lot of meaning, you know. It means that she is dependable and bright,*

> *She is always there to help. She is always on top of things and is always a trooper.*

Sally discloses her personal remembrance of those trips:

> *We would not just talk about flora and fauna. We would talk about life and goals and people in our lives. You know, the colour of the sky, the brightness of stars, and what's beyond the stars and nights on the river.*

The remarks of both mentor and mentoree emphasise an important bond for environmental educators, that is, having a philosophical congruence regarding their views toward environmental education. In probing what is necessary to sustain such a mentoring relationship, Sally explained,

> *Guidance and enthusiasm, they awaken it in you. They probably can't create it. Respect ... I think at some point that a true mentoring role doesn't have to be totally gone, but I would say it has to change, you have to let go at some point and move out on your own ... it has to come from within and you have to make some choices yourself.*

Sally doesn't seem quite ready to become a mentor for someone else, but she understands the benefits which might accrue. She noted, "I don't know if I would seek that role, but I certainly wouldn't shun it. I guess I could offer them enthusiasm and some encouragement. I think I'd be flattered. It would make me feel good that somebody valued my ideas. Anytime somebody asks you for advice, it's a compliment and the satisfaction that it's worthwhile. Plus, I think, sharing with somebody else is an opportunity for you to learn from them as well".

The mentoring chain extends back - *Orin,* the supra mentor

Although this mentoring chain has not yet moved forward, it does extend back to Ivo's own mentor, Orin. Ivo described him as a family friend who shared some of his country background, "I am from a ranching family and we basically spent much of our time in the out of doors and I learned to love it early in life". Orin helped Ivo set his sights on an academic career during his high school days.

> *Orin opened up the academic world for me. He set the goals. I worked very closely with him because he was the coach and the superintendent in this small school. He was the one who helped line me up for college and to get started going into the academic world. So he was my first major mentor.*

Ivo initially started at university in animal husbandry anticipating going back to the ranch, but like Sally, Richard and Dr. Gordon, he was heavily involved with fieldwork and explained, "That is what really got me turned into the direction of broad-leaf ecology and doing environmental assessment on the impact of spruce beetle in Colorado".

After a stint in the military, Ivo finished a Master's degree in biological science and became a high school teacher at the University lab school. He had the opportunity to teach the new BSCS Web of Life curriculum using new methods and stated, "It was a whole frontier, a whole new way, there was a revolution in how you teach, and again that fit me better than the old style and I could see a career really developing in this area".

During that time, Ivo had a chance to attend a special ecology institute in Aspen for biology teachers. He described this new interest stating, "During that time I had plant ecology courses which opened up a whole new field for me which I really enjoyed. There was a professor who was a good field ecologist and was really excited about it and I picked up much of my enthusiasm from the way he approached ecology in the field". This experience prompted Ivo to complete a PhD three years later in botany. He then took up his current position as a science professor, but, unlike many, Ivo always continued to work with pre-service and in-service biology teachers.

Over the years Ivo and Orin became adult friends. When asked about this 'supra mentor's' influence on his career, Ivo describes the support he had been given and the rapport they shared as science teachers.

> *Not in asking for direction ... I knew he was there as support, because he was the one person I wanted to come to my PhD graduation. When I started teaching, I was teaching science and he had been a science teacher,*

> *so we had kept in contact, but it was once or twice a year. When I was out in the schools supervising teachers, I would stop by and spend the day with him.*

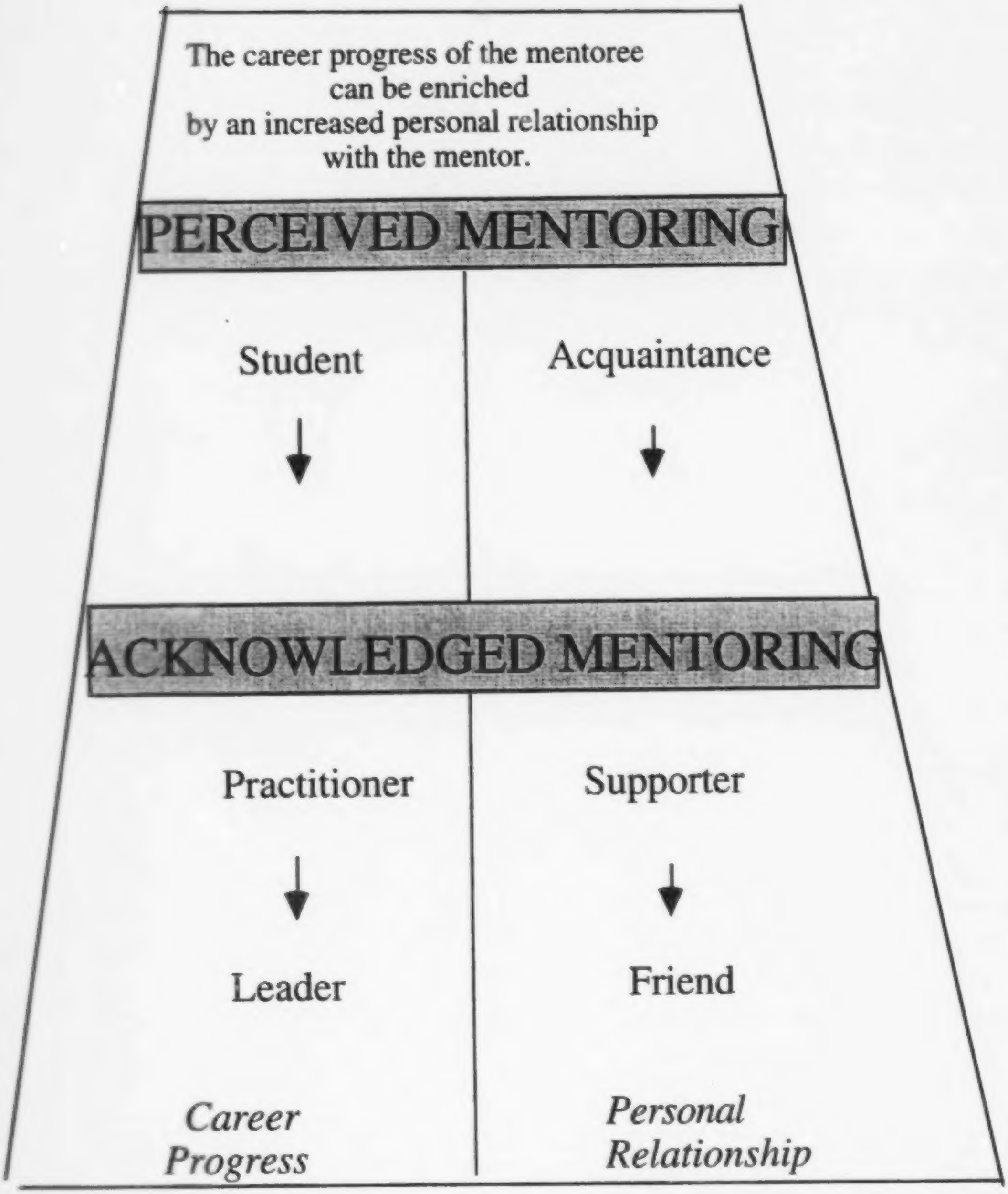
Ivo mentioned a few other people who had acted as transient mentors for specific needs in his life, but he doesn't confuse them with the sustained relationship he had with Orin. One was a professor who asked him to take over some classes, another helped him track his career, but the contact did not extend into a personal relationship, and thirdly, there was his PhD adviser who was too busy with a large group of graduate students to become a personal mentor.

Ivo finished the description of his mentor calling him a 'renaissance individual', one who could appreciate his ranching background, his musical interests and his academic work in science. He summarised the mentoring experience saying, "We kept up a good relationship until his death and I still correspond with his wife. That was a lifelong relationship". In assessing the benefits of mentoring which he received from his 'supra mentor' and may have passed on as a 'prime mentor' to Sally, Ivo states:

> *If I were to draw a concept map for 'mentoring', I would come up with some key words like respect, trust, friendship, innovation - in other words willingness to share ... Probably most mentoring relationships don't develop as deep a relationship as Sally and I have, the friendship between the two of us regardless of where it is or what it is or under what circumstances. That is a relationship I really cherish.*

5.2.3 Commonalities within Records 2A and 2B

Record 2A has shown how the career progress of a mentoree in environmental education can be enhanced by a personal relationship with a mentor. This movement is shown in *Figure 5.4* and includes a second proposition by the researcher. As the relationship moves beyond the initiation stage where both people become acquainted, the mentors becomes supporters of the mentorees often when they are making career



The Mentoring Experience of Leaders in Environmental Education

The career progress of the mentoree
can be enriched
by an increased personal relationship
with the mentor.
PERCEIVED MENTORING
Student
Acquaintance
ACKNOWLEDGED MENTORING
Practitioner
Supporter
Leader
Friend
Career Progress
Personal Relationship

Figure 5.4 **The development of the personal relationship with the mentor along side the mentoree's career progress.**

transitions between being students and practitioners and again when they move from being seasoned practitioners to taking on new roles of leadership.

For Sally and Ivo, Richard and Dr. Gordon the key to initiation and cementing the mentoring relationships was being together on long, intense fieldtrips. They were able to observe each other's professional and personal qualities in an informal setting and evaluate if they wanted the relationship to develop further. All of these participants share a common background in the biological sciences which stresses a knowledge-based approach to environmental education. And yet, in their work with teachers and community, they understand the need for affective as well as cognitive approaches to environmental issues.

The influence of the 'prime mentors' was never overbearing, but supportive, particularly at times of career transition. They invited their mentorees to get to know their families, showing that the mentoring relationship moved beyond the professor/student association. Both mentorees point out leadership characteristics in their mentors, such as engendering inspiration and respect which they are now exhibiting in their own work.

In regards to the 'supra mentors' who were influential in the lives of the 'prime mentors', these relationships were developed before the term 'environmental education' was coined. However, *Prof U* and *Orin* encouraged their mentorees to pursue academic careers in the sciences. This eventually led both men to a knowledge of the 'new' field of environmental science and educating others about it. Today Dr. Gordon not only publishes the major bird identification book in South Africa, but leads birding fieldtrips for interested secondary students and community groups. Ivo began summer classes in the 1970s to update high school biology teachers with methods to deal with environmental issues. He continues that work today being involved in a university program with 'mentor teachers' and working in Washington, D.C. as a consultant for national science policy programs.

5.2.4 Comparisons across Cases Two

In looking across the two records in Case Two various themes are emphasised as shown in the matrix of *Table 5.2* such as awareness of environmental education, personal interaction, intellectual attraction and changes in the relationship over time. Among other things, there is evidence of a cultural difference in the South African formality with which Richard treated Dr. Gordon for twenty years and the American informality of Ivo and Sally who called each other by their first names when skiing and hiking together early in the relationship.

Table 5.2 Comparisons of prominent themes across Records 2A and 2B.

CASE TWO	THEME	THEME	THEME	THEME
TRIADS - Supra mentor, prime mentor and alpha mentoree	Awareness of environmental education	Personal Interaction	Intellectual attraction	Changes in the relationship
Record 2 A *Prof U*	no e. e. at the time	acquaintance		
Dr. Gordon	e.e. as part of biology	supporter	interest in biology	dormancy
Richard	expanding e.e. to community	friend, but formal	professional congruence	physical distance
Record 2B *Orin*	e.e. part of agricultural studies	friend		
Ivo	e. e. as new discrete field	supporter and friend	interest in science	sustainment
Sally	e.e. becomes an embedded subject	friend, informality	philosophical congruence	work together

Another contrast is sheer physical distance. There are long periods of dormancy in the relationship which extends from South Africa to Australia, while the pair in Colorado are only about one hundred miles apart allowing them the opportunity to work together more often. Neither of these factors seems to have a negative influence on the effectiveness of the mentoring experiences.

While Ivo and Sally have had formal training in educational techniques and Richard and Dr. Gordon have approached teaching more intuitively, they would all firmly agree on the need for a strong science base upon which to build environmental education.

5.2.5 Similarities and Contrasts between Cases One and Two

Case One described paired relationships between 'alpha mentorees' and their 'prime mentors', while Case Two traced back the mentoring one step further to 'supra mentors'. Similarities were found in the relationships between each discrete set of mentor and mentoree. Both Cases provided insights into the research question about the process of mentoring. The mutual attraction between each set led to an initiation of the relationship, followed by a developmental stage.

Although the relationships vary in length from the relatively new, and therefore short, relationship between Ed and Barb, and the twenty-five year relationship between Richard and Dr. Gordon, many of the same characteristics are noted regarding the effectiveness of the relationships. These include personal attributes such as encouragement, support and friendship and also philosophical considerations such as a common view on what is environmental education and how it is to be communicated to others.

Both Richard and Sally were encouraged by their 'prime mentors' when it came time to change jobs although neither mentor could directly influence their being hired. Over the years, Richard and Sally, have become 'co-lateral peers' working in different areas, but described by their mentors as being equal in status. This term is distinguished from the term 'colleagues' where the mentor and mentoree hold equal positions but in different regions for the same organisation as is seen with John and Bob (Record 1A). All of these 'alpha mentorees' and 'prime mentors' share both a professional and a philosophical congruence concerning the importance of environmental education and the need for a strong science knowledge to back up the educational aspects.

As teachers, Wendy, Sally and Ed all approach environmental education from similar perspectives regarding the hands-on outdoor work performed by their students. However, there is a difference in environmental knowledge transmitted between the primary teacher with a general background and the two secondary biology teachers. All three are seen by their 'prime mentors' as self-motivated people who voluntarily take additional classes in specific environmental topics for their own enjoyment. Sally and Ed have an added incentive because in the United States, teachers are paid more for a Master's degree as well as for post-graduate university coursework to enhance their teaching subject.

Barb and Richard both work for governmental natural resource agencies and although part of their work involves environmental education, both have accepted this as a challenge in their job with new techniques needed to be learned to make it effective. A reciprocity is found as Ed helped his mentor, Barb, with these additional skills. Richard, on the other hand, relied on emulating the teaching techniques of his mentor, Dr. Gordon.

Of the participants mentioned so far, John and Barb, as members of the Colorado Division of Wildlife, plus Ed and Sally, as facilitators, were involved with *Project WILD* which holds annual leadership training conferences. During this professional training, skills and techniques for presenting environmental education are developed which are applicable to schools and community settings. This contrasts with Wendy, a teacher, and Glen, an environmental education centre principal, who find a scarcity of professional development opportunities through the Queensland Education Department. Yet at the natural resources level, Richard is providing this for his Australian colleagues at the Department of Primary Industries. All of these people pointed out the need for further training for environmental educators and suggested that mentoring would be a way to enhance this.

The pairs and triads of mentoring relationships explained in Cases One and Two do not imply a hierarchical importance nor an age difference from supra mentor to prime mentor to alpha mentoree. The terms simply serve to keep the relationships among participants of the stories clear. In fact, all of the relationships could be considered symmetrical between one mentoree and one mentor as shown in *Figure 5.5*. However, the succession of stories point out certain characteristics of the mentoring process which are transferred from one level to another and begin to illustrate the concept of a 'cascade of mentoring'. These include: following through the initial attraction based on a shared sense of the importance of environmental education plus a personal affinity; developing the relationship to the point where it includes a complementarity of skills, knowledge and leadership style; and continuing the relationship based on personal friendship and professional respect.

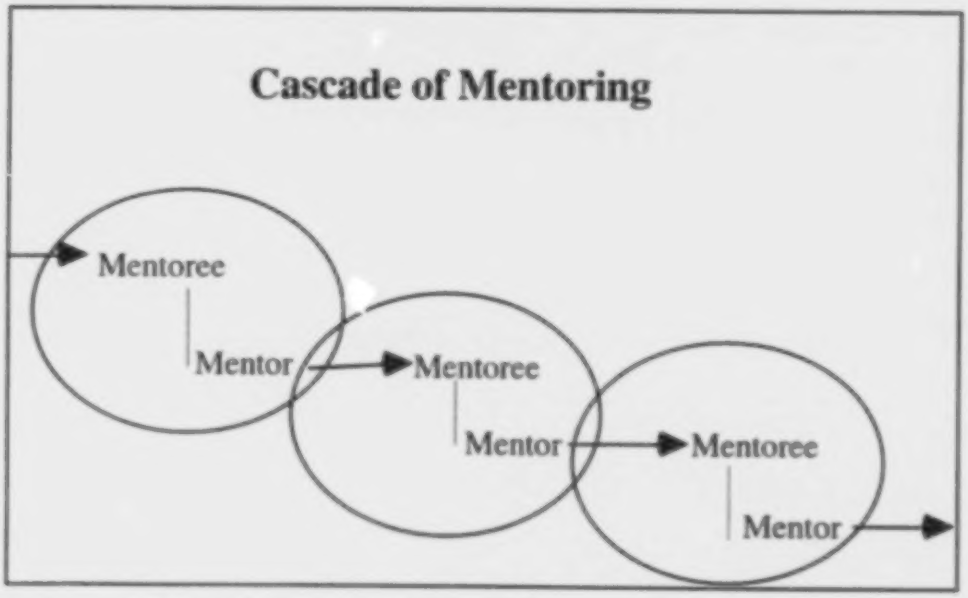
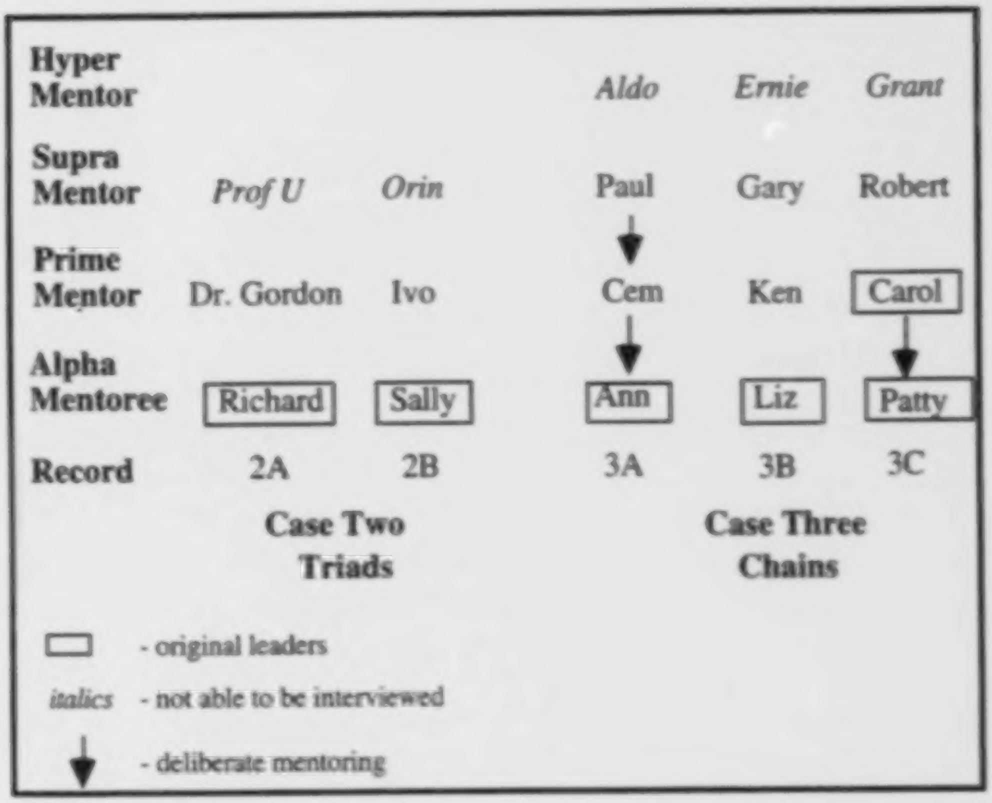


Figure 5.5 Symmetrical relationships within a mentoring pair or triad.

Due to distance and death, neither *Professor U* nor *Orin* was able to be interviewed regarding their perceptions of mentoring the 'prime mentors', Dr. Gordon and Ivo. However, the recollected memories of the 'supra mentors' begin to inform the research question on whether the experience of being mentored encourages one to become a mentor. Case Three reports actual interviews with three 'supra mentors' and goes on to describe the relationships with yet another chain of mentoring, the 'hyper mentors'.

5.3 Case Three - Chains

Case Three will interweave a chain of twelve autobiographical and mentoring stories starting with alpha mentorees and tracing back four levels to hyper mentors as shown in *Figure 5.6*. 'Watershed moments' remembered by both a mentor and a mentoree give a sense of authenticity to these accounts. In exploring the timing and duration of the mentoring process, the narrative will demonstrate the effects of mentoring on the participants' professional alliance. To gain a deeper understanding of the effectiveness of the mentoring relationship, aspects of their personal autobiography will also be described.



Hyper Mentor			*Aldo*	*Ernie*	*Grant*
Supra Mentor	*Prof U*	*Orin*	Paul	Gary	Robert
Prime Mentor	Dr. Gordon	Ivo	Cem	Ken	Carol
Alpha Mentoree	Richard	Sally	Ann	Liz	Patty
Record	2A	2B	3A	3B	3C
	Case Two Triads			**Case Three Chains**	

☐ - original leaders

italics - not able to be interviewed

↓ - deliberate mentoring

Figure 5.6 A comparison of triad and chain mentoring relationships.

5.3.1 Record 3A - Ann, Cem, Paul and *Aldo*

Personal and Contextual Background of the Mentoree

To understand Ann's personal story of mentoring it is necessary to review briefly some of her contextual background. Growing up in coastal swamp forests of Louisiana, USA, Anne always felt comfortable in the outdoors. She mentioned some middle and high school teachers who nurtured her development in chemistry and physics. However, at University she switched from engineering to biology reasoning that her environmental consciousness was somehow raised by the biology courses that she had been taking and by the camping and rock climbing she pursued during her leisure time. She had always wanted to live in Colorado since visiting the state on family vacations and after university she gained employment there as a naturalist working with raptor rehabilitation at an environmental education centre. This is where she met her mentor, Cem, who was her supervisor for several years

After consulting her mentor, Ann left her interpreter's job to pursue a further teaching certification. Part of the reason for this transition was explained in her comments:

> *As an interpreter, I could say this is how the environment is, but as a teacher, I realised that for true environmental education, you have to give all sides and let people think for themselves.*

She eventually qualified as a participant for this study through her innovative work as a secondary biology teacher with the Global Lab environmental science/telecommunications project and subsequent leadership activity as a facilitator with *Project WILD.*

Ann fulfils her own description of leadership in environmental education which she had listed in her survey questionnaire: "excellent teaching ability; positive outlook; self-motivated, energetic, risk-taker; being a role model; environmental attitudes, beliefs, and lifestyle; strong interpersonal skills; 'whole-brained' - creative, analytical; willing to tackle the impossible; gets students involved with the community". She also wrote about her understanding of a mentor for environmental education as:

> *an established leader who introduces you to environmental education program materials, provides examples of successful projects they have done, provides opportunities for building self-confidence, gives constructive criticism, helps you through rough spots, encourages you to take risks when you are ready for them.*

Other key attributes which Ann highlighted for a mentor were: "lives the kind of environmentally sound lifestyle that is a model for others; has internal motivation which is usually 'spiritual' as well as mental, not primarily concerned with financial gain, their sources of recreation/ entertainment/release usually are found in natural settings, primarily compassionate people more concerned with creating a better world for children and future generations (ie. its not just a job)". This sentiment was echoed by her mentor, Cem, who stated:

> *I think it is an all-encompassing field. One doesn't do environmental education as a job, it is one of those things where it needs to be your lifestyle. It needs to be something that you believe in ... The philosophical grounding can't be a process where one just does this to look good, it needs to be altruistic and a deeply held value system that evolves out of it.*

Initiation of the Alpha Mentoree/ the Prime Mentor Relationship

Both mentoree and mentor give similar accounts of the initial contact which sparked the mentoring relationship.

> *It was definitely accidental, fate just put us together ... we ended up talking about philosophies of life and there was some kind of connection. Cem was very encouraging and couldn't wait for me to get there and we just ended up talking for a long time ... Had it not been for the personal connection I don't see the other stuff happening, I wouldn't be here. That has to be first for me anyway.*

> *I hired Ann to work at the Raptor Centre through a telephone interview and there was some spark about her*

> *on the telephone. Now when she did come on board, I could immediately see that she was a very talented person.*

Cultural Differences

The initial personal affinity between these two people was enhanced by their common backgrounds and interesting cultural similarities and differences. Both were raised in middle class families and attended public schools in the United States. Cem is part French and shares that cultural tie with Ann who has a Cajun Louisianan background. A basic difference, however, is that Cem lived until age ten in his Turkish homeland and he explained that his earliest exposure to dealing with the environment came from the local boatmen on an island where he spent his summers. Ann commented on how this different perspective affected her.

> *He just came to the country with some different foundations, more eastern tradition, maybe, and that really seems to help me, because since the beginning of time they have always been more in tune to the environment and nature. He had that in him already and he nurtured that in me. Western tradition, and I think it has a lot to do with Christianity and the European mind set, is very consumptive and had to tackle nature and conquer it. Nature is in the way, let's get through that and get to civilisation. Eastern philosophy to me is more embracing of nature and not seeing themselves apart from it - a lot like the native Americans ... Cem was very much into the native Americans and maybe that is what drew us both to Pueblo and it makes a lot of sense and it fits perfectly, I think, with the environmental education.*

Cem went on to explain Ann's interest in his approach to environmental philosophy:

> *I identify very strongly, as you can see by the Turkish flag on my desk, that was part of my culture and my heritage. I think it was probably an attraction. Ann is*

> *the type of person who thirsts for knowledge and for new ways of thinking. I think having more of a global perspective coming from a developing country, that I was able to share some life experience. I think she found those attractive from the concept of a new body of knowledge that she hadn't been exposed to.*

Types of Attraction

The distinction between mental and physical attraction is pointed out by Ann and Cem who stressed philosophical congruence and complementary world-views toward the environment as the basis for the initiation of their relationship.

> *Part of the mentoring process has to be some sense of attraction. I'm obviously talking about the mind and not physical things, but the point is there are some similarities, some liking, some sense of communication between the two and I think that was real evident with Ann.*

> *I never felt like Cem was going to make a pass at me, it was not that kind of relationship, so I never worried about that and that really helped me open up and let him open up so that there could be that exchange. I never felt threatened by him ever.*

But beyond these considerations, both parties referred to lack of self-esteem for a woman being mentored early in their career in the traditionally male-dominated field of environmental education. This issue is illustrated in their comparative comments.

> Cem: *I felt that Ann had a lot to give, but at the same time was being held back because of whatever past experience she had had. She didn't trust herself; she didn't have the self-confidence. It is a type of thing that I see quite a bit of, the age twenty-two twenty-four, especially with women. They haven't had a chance to express themselves.*

> Ann: *I always felt Cem is up there and I am looking up at him. He is my best friend and it took a long time to cultivate that, because I was still a low-self esteem woman looking up to this man. It took some time to get past that.*

Professional Help from the Prime Mentor

On her questionnaire Ann ranked the characteristics of a mentor's professional help in the following order of importance: delegated more responsibility to me; opened opportunities for me to work outside my normal job; increased my access to resources; removed barriers with employers to allow for new opportunities; introduced me to a wider network; and provided travel opportunities in relationship to my career. Cem fulfilled many of these functions for Ann and felt that he was able to tease out some of her talents by challenging her with new opportunities.

> *So I felt that here was this bright, wonderful woman who had a lot of talents and didn't trust herself. And I decided that I wanted to go ahead and encourage her. I consciously made the effort to put her in situations where she would test herself and she would come through every single one of them.*

Ann remembered Cem's challenges such as learning to use the computer to enhance her environmental education materials and accepting his offer to become the manager of the Raptor Centre even though her undergraduate background had been with mammals. He also introduced her to the network of the National Association of Interpreters and she described the effect.

> *He helped me make those connections with people and always introduced me to the big wigs in the environmental movement. Because I am kind of shy, he taught me how to go about that. He got me involved with people and got my name on things, saying you want to be involved in this professional organisation and make contact with these people. He showed me the ropes of how to get involved with it all ... He is the kind*

> *of guy who can get me into things that I wouldn't have access to otherwise, because he is ahead of me professionally.*

A shared sense of integrity

As the relationship developed, one the characteristics of his mentoree that Cem found important was her sense of 'integrity'. Ann had described it as something that "comes from my heart". Cem offered his explanation.

> *'Integrity' is a word that is a very important construct for Ann. She bases her relationships, her motivation for her work on truth and integrity. I think what she means by that is there are a lot of people out in the world who only get involved when something becomes popular - like what is happening to environmental education. Certainly even on this campus, it is a big buzzword now, everybody want to put environment into their curriculum, so it is beneficial to them. I think that is where Ann would look and say there is a lack of integrity. The fact that if you want to do environmental education or you are concerned about the environment, it has to be that you mean it.*

A shared 'watershed moment'

A key to understanding the effectiveness of the mentoring relationship between Ann and Cem lies in their separate descriptions of the same 'watershed moment'. When Ann was contemplating leaving the nature centre and going into teaching, she recalled:

> *I would come to the point where I would say, Cem I can't do that, it is not within my abilities. One thing I remember him telling me above anything else, and this applied so much in my personal life too, was when he sat me down one day. He said I am going to tell you what I think of you and said this is how I see you. We were at the picnic table at the Nature Centre and he was using his fingers, 'Ok here's Ann and she is walking to the edge of the cliff (because he knew I did rock climbing,)*

> *Things get tough and you know you need to jump, you know that is what you've got to do, but do you, no you back up'. I thought he has me pegged. 'This is what you need to do, you need to go to the edge of the cliff and jump, but instead of falling, you are going to soar'. I am a visual person and I had never thought of it like that, I was afraid I would fall flat on my face. He said, "Jump off the cliff, spread your wings and fly up!' It sounded so simple, but that statement made the biggest difference in my life and I think of it in all kinds of ways when I am nervous. It was like with the new class I was setting up last year. That is what he taught me and he did it through little ways, especially that profound statement that day, it made so much sense.*

Ann stated that it was hard to separate the professional mentor from the personal mentor in this case. When comparing Cem's recollection of this incident, it contains not only the same temporal specifics, but also the same psychological ties: trust, support, encouragement.

> *One of the interesting things with her, I don't know if she mentioned it to you or not, it was at one of our special events at night and we were sitting at a picnic table and were taking a break and it was one of those very disclosive times. She was disclosing her anxieties of life and whatever. It was very distinct in my mind and I remember it very well and I remember telling her that she had to picture it as a person who had walked up to a hill and knew she could fly, but refused to jump off. I said, 'you know you have to jump because you can.' I know that she has referred to that particular talk several times over the years as well. That was a pivotal point for her in terms of making up her mind that there was some truth to that, that she, indeed, had some abilities. I know that she struggled and she still does a little bit in terms of her skills and her abilities. But I think that was the time where she decided maybe you are right, maybe I am pretty good. For me, as the mentor, (I still don't think of myself as her mentor),. I felt that that was one of*

> *those times when you are trying to help someone and you finally get through so that is why it is memorable for me. I knew that by her body language and her eyes and her reaction that something did happen. So that was a very pleasant moment for me.*

The Development of the Relationship

The mentoring relationship matured when Ann went back to university. Cem observed, "That was the cusp, jumping in after being under your influence and guidance to being on your own. The mentor becomes part of the foundation". In spite of no longer working together on a daily basis, the mentoring relationship continued to develop in a two-pronged manner - professionally and personally which are shown in the following comparative quotes.

> Personal Mentoring:
> *Cem helped me have the courage to take risks; he was a good 'sounding board'; he was a true friend; he never tried to impress me or act over important. He let me see him as a real person.*
>
> *Interestingly with Ann, that relationship in itself has turned into a friendship and I consider her one of my closer friends.*

> Professional Mentoring:
> *In many circles Cem is definitely a public figure when it comes to environmental education and interpretation and when he is up there, everybody knows him and adores him. But he gave me opportunities to get to know the real person. I guess that helped to see that I'm not some little fledgling, some little groupie or something, I am an intellectual equal with him.*
>
> *At this point there is no unequal process in our relationship. I think in terms of our experience and in terms of the body of knowledge, perhaps I may have an advantage there, but that is a temporary process. I don't*

> *consider Ann as one of my students ... to me part of the mentoring process is to find that person that you want to put that energy into and have them be your colleague.*

Disclosure - an interpersonal process

The relationship between Ann and Cem demonstrates an interpersonal process. Cem felt that disclosing your feelings to the person you are mentoring is very critical. "We talk quite a bit about our future plans and where we want to go and what we want to do and our success and failure and asking advice back and forth". Cem compared this personal aspect of the relationship with his own mentoring experience.

> *Maybe I didn't get a lot of that from Paul for me, but I got some of it, so that there was a sense of comfort, a sense of evolving friendship that I knew at some point I was going to be good enough to be his friend. And I think, perhaps, that was the case with Ann. I think she knows that she is my friend now. I realised that before she did and maybe Paul did before I did too.*

Ann maintained that she and Cem have had differences of opinion during the six year mentoring relationship, but never really had a conflict. She attributed this to their common belief in what they are doing.

> *We maintain the relationship through phone and letters, cards and I go up and see him periodically. We have kind of gone different ways as far as professional organisations, he is more into the interpreters associations and I am more into the teaching. I have had to devote time to the education scene. Hopefully, we will join again as far as environmental meetings. I miss that. He could be on the other side of the planet and we would still have those ties ... It is incredible, the sparks start to fly ... environmental education is becoming a much bigger picture than I ever imagined it could be.*

Continuing the Mentoring Cascade

While Cem did not primarily think of himself as a 'formally identified mentor', he understood that he was perceived as such by Ann who has acknowledged this to him. Ann does not yet envision herself as ready to mentor someone else due to her new job and beginning a master's degree. She felt that if she were to become a mentor for someone in environmental education it would have several benefits such as: being motivating and rejuvenating, clarifying things in her own mind, providing the new mentoree with successful programs, and helping them break into a an expanding field. She projected the effects of a 'cascade of mentoring'.

> *I assume helping someone else get into the role of environmental educator would be a relief because I am not alone and this isn't going to stop with people I know, it is going to continue and grow ... you just hope you are able to do the right kind of mentoring.*

Today Cem sees himself "as a professional environmental educator, whereas many others view themselves as researchers and academics". As he became more comfortable with the designation of mentor, he was able to explain his ideas about 'the right kind' of mentoring for someone in this field.

> *I think that this mentoring process is one in which mentors have to have tremendous access to people, access to thoughts and to expressing their feelings and what they think they should be doing.*

The interviews with Cem and Ann had taken place in a relatively short span of time and they had not consulted one another as to what had been discussed. Therefore, the similar memories of events and the congruity of wording give a sense of reliability to the descriptions of the personal relationship and the professional alliance.

The Supra Mentoring Experience

To understand if Cem had benefited from any 'cascade of mentoring', he recounted his experience with his own mentor, Paul, a university professor from southern Illinois. Cem described him as "one of the big people in environmental education" who guided him in developing this interest. To corroborate Cem's account, it took this researcher two more years and the use of e-mail and fax to get Paul's version. Again there is a concurrence in the 'watershed' memories' about the beginning of the relationship.

> Cem's account:
> *Paul was the professor that I was told to go see by my girlfriend. I went and talked to him and spoke to him and over the years I became one of his students. It was an immediate attraction, very charismatic personality. One could see that this person was your image of the educator, the outdoorsman, very sincere, always had time for students and always very helpful. Very helpful in terms of going to and getting guidance from him and I think that was a critical thing.*

> Paul's account:
> *At the time I was responsible for two courses dealing with environmental education and environmental interpretation. Cem and his then significant other entered my class with a typical degree of anonymity, but soon both emerged as 'special'. Special, as I recall, not merely because they were bright and responsive, but also because they exhibited special concern about the environment. This concern, which we could now place high on the scale of environmental awareness, was sufficiently rare - at the time - to be both apparent and welcome.*

Paul went on to explain his concept of Kolhberg's developmental stages (1971) which he applied to environmental awareness, that is, we all tend to go through similar stages, but not necessarily at the same progression. He felt that "Cem had matured early in this regard". Cem also made some personal observations about the characteristics of his mentor:

> *Paul was one of those people who was able to live the life that he was talking about. He is a very unique*

> *person. He was a real intellect who could take a thought and dissect it beyond anything one can imagine. A wonderful person.*

The developing relationship with the supra mentor

Paul described how the mentoring relationship progressed remembering that "over a period of time, there developed from the student/teacher relationship, a stronger, and more personal one based on our informal conversations and discussions of the environmental education and interpretation projects in which Cem was already involved". Cem compares the personal closeness he had with his 'supra mentor' and that he had as Ann's 'prime mentor'.

> *Our relationship wasn't very close when I think of my relationship with Ann and others, ours is a lot friendlier. I'm not sure if he had that with others, but certainly with me I felt that I was getting enough out of that particular relationship.*

A sense of formality

Cem goes on to recount a level of formality that was maintained which may have affected the development of a close personal friendship.

> *Again, it was more of a one-sided thing, because I was at a point in my life where I was absolutely in awe of his person. In fact, I just started calling him Paul. He was the type of person who liked to be called by his first name instead of Dr. Y, but I couldn't bring myself to do that because of the tremendous respect I had for him. I figured out once I was here, at the University, I had made it and I could call him Paul. It was a feeling that for someone, and I still hold him in that regard, who had made such a large mark in his field to be called by his Christian name would equate my abilities to his and I didn't feel that I could do that. Even though he encouraged me to do so. Perhaps that might have prevented a friendship developing, because obviously I was making it unequal.*

Cem revealed that even when he helped Paul build his solar home, his 'European upbringing' just didn't allow him to use his professor's first name. This formality, which finally changed when Cem took a position at university level, is similar to that found between Richard and Dr. Gordon (Record 2A).

Dormancy and reactivation

The twenty year relationship between the prime mentor and his supra mentor went through periods of dormancy due to changes of jobs, relocation, and retirement. However, they have still managed to keep in touch.

> *I met him in 1974 and we still write back and forth There was a period of about six years where I haven't kept in touch. He has retired and his health hasn't been that good, and he has moved around quite a bit. Finally, I was able to trace him down when I came to the University here. So we have written back forth a few times and I am still seeking his guidance and asking his opinion and also letting him know where I am. It is important from my perspective that he knows I am one of those out of his bunch that has made it.*

Acknowledgment of the mentoring relationship

When asked if Paul knew that he was thought of as a mentor, Cem remarked, "I never told him that I considered him a mentor, but I think he had an idea. I think he does know now that I consider him a mentor judging by some of the comments in his letters". When Paul was contacted as the 'supra mentor', he commented about the benefits Cem might have received from the relationship.

> *By the time Cem headed west he had the basic tools - knowledge, insights, techniques, etc. - to develop professionally with little further input from me.*

The role of an environmental education mentor

Cem distinguished the role of the mentor for someone in environmental education as opposed to someone in the 'hard sciences' where a mentoree might just be extending the mentor's research and therefore need to duplicate a process. He felt that good environmental educators evolve their own personal styles. "It is one of those things that you have to unwrap ... and that unwrapping process is the role of the mentor ... it is a spiritual and intellectual process and a moral grounding of understanding why you are doing it". He saw this same process at work in his mentoring by Paul and what he provided for Ann.

> *It is the same thing with Paul and myself. We are different and he was able to see that and force me to try and take chances. And the same thing with Ann, the way she approaches communicating, she will evolve her own style that is nothing like me. Nobody will be able to look at and her and say, she's Cem's or nobody will be able to look at me and say he's Paul's.*

Paul still serves as a role model for Cem as their relationship is sustained over time.

> *Paul is someone that I barely keep in touch with now, but he is certainly the model that I look to when I am going through and dealing with students or in my teaching or actually in my life. So he was a yardstick, so that when I came into a situation, the question pops up in to my mind, how would he react. That, I think, has pulled me out of a lot of jams that I might have been in, in terms of programming and dealing with issues.*

Cem wanted to see a reactivation of professional contact with Paul in order to introduce him to his current environmental science students explaining, "I am trying to figure out how to get him out here as a guest lecturer. He is a prominent personality and all my students in my classes know who Paul is". Also Cem would like to renew the personal contact with him "to see where we have evolved in terms of where I have come to and where he is, to look and see if we still think the same". Regarding his own leadership in this field, Cem commented:

> *I have a very concrete plan for the next five years of what I want to do in terms of the profession and some of*

> *the theoretical things in the profession which I would like to share with him as well.*

Wondering if he may have gone past his 'supra mentor' in some ways, Cem reflected:

> *But I think I have certainly taken it beyond where he was. Interestingly, he was one of those people who never really did a lot of writing, he was the consummate teacher, the person who encouraged as opposed to recording what he had done. I suspect that is why you haven't heard of him. And you would have if he had written, because I think intellectually he is one of the most brilliant people that I have ever come across. That in itself was an educational process for me.*

As a result of this research, the prime mentor and supra mentor are in touch once again.

Paul's contextual background

To understand why Paul may have chosen teaching over publishing, he described some of his own background. He had started out to be a forester with a major in wildlife management, but recalled:.

> *It soon became apparent that the curriculum was narrower than my interests had grown, but becoming a natural resource generalist seemed to guarantee both poverty and ridicule. It occurred to me that I might do my thesis and some of my coursework in conservation and still be granted a M.S. degree in forestry ... I finally got the courage to discuss this possibility with the dean.*

Luck was with him as a brand new School of Natural Resources at the University of Michigan was opening and he had the opportunity to "start on a degree in conservation before there was such a thing". The new professor whose special interest was demography served as an 'academic mentor' engendering in him the idea that there is no substitute for accuracy and precision and setting a philosophy toward environmental education.

> *I was convinced, as never before, that good ideas must be based on facts. Warm fuzzy feelings about the environment can serve a useful function, but our societal and personal policies regarding the environment must be firmly grounded in ecology, thermodynamics, and chemistry (to name a few relevant fields).*

The story of Paul's track through university held some interesting parallels to that of Cem's, who explained:

> *My Forestry/Ecology Degree is a special major which I wrote specific to interpretation and Paul guided me through that. I think I am one of the very few people who did that at that university. So I spent quite a bit of time developing the justification to go to the dean and pursue that. So there was a lot of guidance and contact with Paul throughout that process.*

The hyper mentoring experience

When Paul was asked if he had one significant mentor for environmental education, he pointed to Aldo Leopold and described the association in the following manner:

> *Aldo Leopold died about the time I entered the forestry program at Michigan. We read pre-publication copies of his* 'Sand County Almanac '*in the first seminar in which I ever participated. The student who had chosen that book for review began his presentation with the words, 'This is a classic!', as he held the small volume aloft. My traditional upbringing disallowed my fully accepting his definition, but I had already found the book to be fascinating - both relevant to some of my experiences in the out-of-doors and transcendent in so frequently going beyond my perceptions.*

Developing awareness of the environment

To understand fully how the deceased author of a book can serve as a effective 'hyper mentor' for someone, it is necessary to delve into the background of Paul a bit further. He described his childhood home in

East Tennessee as "a good place to grow up; the lakes and mountains being readily accessible, and as yet, untrammelled". He speaks of being allowed to spend weekends alone in the Smoky Mountains, and commented that "in retrospect, I see this period of my life as one in which I developed an enduring appreciation of nature and a sense that society, as a whole, benefits if wild places are retained and experienced". Paul credits his father whom he described as "an engineer by vocation and a naturalist by avocation" as the one who instilled in him an enduring appreciation of interrelatedness of nature, a concept which would later be called the study of 'ecosystems'.

His philosophy of environmental education was formed by two major experiences. During one summer university break, Paul hiked from Maine to Georgia on the Appalachian Trail, and summarised the effect that experience had on him:

> *Quiet reflection along the trail and around the campfire made more secure my commitment to the environment as a whole. It was at that time I first realised that preserving species and preserving processes were both prerequisites to success in conservation.*

Paul had also read Gifford Pinchot's autobiography called, *Breaking New Ground* and became intrigued by the often bitter controversy between Pinchot and John Muir. Most of Paul's professors, as he recalled, were of the generation which had been shaped by the philosophy of Pinchot, the renowned 'first American forester'. But Paul's opinion differed commenting, "as you can surmise, the results were not all desirable. Today, after further historical review, I cast my lot with Muir". Paul's personal experiences, plus the effect which the life and writings of Aldo Leopold had on him professionally, set the tone for his further work in environmental education.

Later on Paul served as Dean of Applied Arts and Sciences in Wisconsin where he described some of his work. "The position provided the wherewithal to make things happen. We devised and expanded a generalist-based conservation curriculum, assisted in writing clean water legislation for the state, and succeeded in getting 'conservation' recognised as an essential part of so-called general education". The general education courses to which Paul refers must be taken by all

American university students before they major in an area of interest. This pattern contrasts to the specialised content normally taken for a three year Australian degree.

Paul went on to say that "despite the trappings which often accompany deanships, my real longing was to be a mere full professor with more time for reflection". He described his move to Illinois, saying, "I was able to become a professor, by my definition - doing and saying what seemed important and worthwhile to me. Not a bad set-up!"

Passing on the Influence of the Hyper Mentor

During his tenure in Illinois, Paul passed on his sense of mentoring from Aldo Leopold to his student, Cem. He described further the influence of Leopold:

> *There was, and is, no doubt that reading and rereading* 'Sand County Almanac', *as well as visiting his farm in Sauk county Wisconsin several times, has provided mentoring for me - and for some of those who have followed me.*

Clanning not cloning

The effects of mentoring from a 'hyper mentor level' to a 'supra mentor', to a 'prime mentor' and cascading on to new mentorees is illustrated through Cem's memory of Paul speaking about Aldo. Cem stated, "Paul never talked in detail about Aldo Leopold, although he quoted his works often. His only story was being in the cabin. As for their relationship, I don't know other than I recall Paul using the word 'mentor' in reference to him". Paul confirmed this experience of taking students to whom he might become a mentor to commune with someone who was his own mentor.

> *I have visited the Leopold Farm several times with various groups of students - and their responses are quite varied. The stump of the oak which provided the literary device for Leopold to help us ponder the trends in conservation and, what would now be called environmental awareness, was still there. We would stop to examine the annual rings, discuss the different*

> *analogies; for example, in terms of history, how does sawing wood across the annual rings differ from splitting the wood? Some students would become quite reflective - and quiet. Others would respond with something like, 'Is it O.K. if we head back to the van and eat lunch'?*

Paul noted that some students were more attuned than others to learning environmental education history and some of them were open to the possibility of mentoring. In turn, Cem has passed on this tradition to the students in his class called 'The Principles of Interpretation and Environmental Education".

> *In fact I talk about this quite a bit in my classes - in the field of interpretation we talk about the 'clan' and that we can tie ourselves back to all the great giants in the past. Paul was a student of Aldo Leopold's, so that is a tie. ... That is, just telling them that there is a sense of history, that there are strands that go out and connect all of those things that have happened in the past. I think it is a very important process, at least for me that I can identify with a Leopold or a John Muir. There is this tremendous connection and I tell my students that I am that link to you ... you are the next generation of those people and understand that this is not just an ephemeral process that you are coming through here to hear about this course, but you are tied to it. You can make a sort of strand that goes out on a knot, like a macrame piece. Those students talk about it. They come up and say, someday I'm going to be part of that clan.*

Cem realised that not everybody is going to be a John Muir or a Leopold or write like them or be recognised like them, but he tries to get across to his students that everybody has their place in the process of environmental education. Cem tied his idea of 'clanning' to his concept of mentoring remarking, "In that sense, the mentor has to be the conduit to that span of involvement - making students feel that they have to put some energy in and they have to take some chances and that most of them do have the ability to get to that point is a critical part of the mentoring process". Cem is now at the stage in his career where he is beginning to see some of the benefits of his mentoring, not only with Ann, but others as well. He stated:

> *When I look back at all the school programs that I've done, I know the most valuable things that I have done is to energise other people. I am at an age right now where I am beginning to see that some of those earlier people are beginning to direct facilities and are writing books and occasionally I hear from them saying 'thanks'.*

There is a definite distinction between the term 'clan' and 'clone' for both of these mentors. Paul commented on sending out mentorees who were self-sufficient saying, "From my perspective, this is pretty much the way it should be; after all mentors should not be striving to create clones. 'Disciples' should move on to other mentors and to become mentors in their own rights". Cem' s words carry a similar sentiment.

> *That is one of the things with Paul that I've never seen. ... There are many people with whom I work who are precisely doing that, they want to basically clone themselves and they want the person going out to basically represent them and their ideas. They are just an extension, like little leaflets being thrown out into the countryside. And certainly that was not a feeling of Paul's and if it was, my personality wouldn't allow that. He always looked at your strengths and encouraged people, others as well, to go out and do things, not necessarily the way he would do them.*

Cem is cognisant of the fact that in his quiet way, Paul is renowned through his network of old students whom he chances to meet in different places.

> *Interestingly, too, as I do a lot of training programs for the Forest Service and Parks Service that there are some stories of his that I tell and I always tell them as 'Paul Stories' and interestingly there is always a handful that always come up and say, I am a 'Dr. Y person' too. There is that wonderful feeling that his influence is still out there.*

According to Cem, Paul's network had an even more influential effect in his local area especially in the upper mid-west where he is a little better known. Cem remembered, "Aside from those times when he did introduce me and brought us along and took us around and made those networking connection, just his name alone, the fact that you were one of his students, opened up a lot of doors that normally wouldn't have been open". That unheralded network allowed Cem to move to the Colorado nature centre where the director was another 'Paul' person'.

As the 'prime mentor' for Ann, Cem provided similar opportunities that he had been afforded by Paul. Today Cem acts as a mentor to a few other people and observed, "There are several people that I am mentoring right now, but I know that at some point they are going to be my colleagues. In fact I approach it that way. It is funny because I have several students who are wanting to call me 'Dr.' which, of course I am not yet, and I have to actually force them to call me Cem. And it is funny because it is the same process that I had gone through". This difference in formality could be due to the fact that Cem is now at university, whereas he and Ann were at a Nature Centre with a less structured hierarchy, but there is a similarity in the process of the mentorees becoming a mentor's equal. Cem described this in a visual analogy of two arrows, one skinny and the other fat, changing in size through a reciprocity of mentoring energy until the relationship becomes equalised and the arrows are the same width. He sees this both with himself and with Ann.

> *I look at myself and I am a product of Paul, but I am also a product of Ann. She has come back and made me evolve. I think that is the real essence of mentoring.*

Cem had different goals for his career from his 'supra mentor' who chose not to pursue the path of academic publishing. He explained:

> *I may have an egoist point of view, but I certainly want to leave my mark and leave my name, too, in terms of the profession. As I trace back I can see that part of my motivation is looking at someone like Paul whom I feel should be an icon out there who should be noticed and isn't. That has always been behind my thinking in some of the more flashy things that I do to get noticed.*

Cem went on to explain that part of his reasoning for this 'showmanship' is because of observations he has made over the last fifteen years while attending conferences and workshops for environmental science, interpretation and environmental education.

> *When you find somebody who is charismatic or who has a new angle and approach to our field, it almost seems like there is a set of groupies around this person. From this, I concluded that we are in a field that is in constant need of heroes ... and I always wondered why that was. I think that gets back to our original question, perhaps some people did not have mentors ... Again people who are in this field are in it because of an internal drive that comes from their value system and actually drives their belief system, they try to attach that deep feeling. I think, mentoring is really important because this is a field that has to have a constant fire that is being burned inside of us and I think those fires are stoked by energy that you get from mentors.*

Cem's conclusion regarding the need for mentoring within a field wrought with potential controversy ties together many of the themes highlighted in this case record - Ann's sense of integrity, Cem's ideas of disclosure and clanning, Paul's ideas of environmental process, the need for a scientific base and not making clones, and Aldo's sense of ethics brought out in his writing and his personal lifestyle which was admired by all the people chronicled in this account of mentoring cascades.

5.3.2 Record 3B - Liz, Ken, Gary and *Ernie*

Case Three Record 3B differs from Record 2B in that the relationships involved people in business settings. Liz, the 'alpha mentoree' and Ken, her 'prime mentor' work for the same quasi-governmental Water Board for the city of Denver, Colorado. Gary, the 'supra mentor', works for a private enterprise which sites hazardous waste facilities while Ernie, the 'hyper mentor', is retired from the U. S. Forest Service and is now a private consultant. Neither Liz nor Gary started out with a strong personal affinity to environmental education having more direct interest in the social sciences. However, a transference of the awareness of environmental education and the process of group facilitation skills for problem solving are common threads which link these four layers of mentors and mentorees.

Switching on to ecology - Liz, the alpha mentoree

Liz grew up in a family where her parents were not outdoors people saying, "there was no nature per se in my upbringing". And yet, she mentioned that her grandparents were farmers and had an early influence on her.

> *One of my earliest memories of my grandparents was being outdoors with my Grandpa Childers. He was the gardener of the family and I think I was four years old. I said, 'Grandpa, how can you tell the difference, everything is just green'. He said, 'Elizabeth, when you are older, you'll know the difference'. I don't know why I remember that so well, but he cared so much about his garden and he loved the land. And somehow even though he died a couple years later, that got translated to me.*

Until she was twenty-four, Liz still thought of herself as a 'city kid' who didn't go hiking or to the mountains because "being outdoors meant mosquito bites to me". However, when she was in college, one of her suite mates described a brand new course called 'Ecology'. Liz said hearing about it "was as though a switch got turned on in my head. But, I didn't do anything about it then because I was a history major and I was talking about the lessons of history that we should apply in the future".

Early career - meeting her prime mentor

Liz' first job was not in teaching ideas from history, but working on contemporary conservation issues for the Denver Water Board. She realised:

> *I began to see, as kids came through on tours, that they hadn't the vaguest idea of what we were really doing and why it was important. And so I asked my supervisor if I could translate what the chemists and the biologists were actually doing for the kids.*

Since she had an education minor, she was given permission to do so and it was during this phase of her work that she met her 'prime mentor', Ken. His job as a planner was to oversee the environmental consequences of building dams, straightening out streams and lining the channels.

Watershed moment between the alpha mentoree and her prime mentor.

Liz described a 'watershed moment' with her mentor when they discussed what they could do together to get people to look not just at water quality, but also at water conservation. She remembered that Ken had been through the U.S. Forest Service Environmental Education program that was developed way back in the early seventies. That day he brought some pages from the workshop to show her during a lunch break and she remembered:

> *We walked outside my office and went up on top of a grassy knoll and he had me taste a stem of grass. I had never tried that; it was not something we did in my family. I can remember that it was a warm summer day and here I am sitting out there with this nice, but fairly new guy to my acquaintance eating grass and looking like very weird people.*

Ken offered a similar version of the initiation of the relationship. He met Liz in the early seventies when he was in charge of the environmental planning program for Denver Water and she was working at the water quality laboratory.

> *I am trying to put together the pieces of chemistry that were happening at that time. There was a lot of energy. There were a lot of similar attitudes. I don't even remember the incidence where we came together the first time, but we had a chance over lunch at some point to talk about philosophy essentially. One thing led to another and we were reinforcing one another and that may be the basis for the continuation of this whole, if I may use the term, 'affair of the earth'.*

Liz remembered that one of Ken's influences was a guy named Gary who was with U.S. Forest Service. Not long after this Liz finally took her very first environmental education workshop facilitated by Gary and commented:

> *I would say that was the turning point in my career. I saw that the stuff, that I now know are externalities (things over which we have no direct control) are really intrinsic to the process. They are part of 'systems thinking'. I saw that by analysing issues and getting involved in it and getting people to see how their values mattered, that we can make a difference. I got so charged up from that, it was wonderful .*

Dormancy in the relationship with Ken

After this Liz didn't see much of Ken for awhile because he was loaned by the Water Department to the City and County of Denver to do a special program. Ken became part of the board of directors of 'Keep Colorado Beautiful' which he described as "a non-profit, voluntary, learning educational program where a small nucleus of people trained others on a larger scale who became involved with quality issues of life management on earth".

From there Ken became part of the national organisation, 'Keep America Beautiful' and felt it was "one of the greatest things in my life to be selected out of thousands of potential people to represent them and go from city to city and help their people put together teams of like people to train members of their community in one form of environmental education". According to Ken, their mission was broader than litter prevention and recycling, it was "a proactive learning experience for people - the whole level from the media in a community through governmental and business sectors through the residential. It was very well organised throughout the various sectors in a community".

Reactivation of the professional alliance

When Ken came back from 'Keeping America Beautiful', he described his professional growth.

> *There was some selfish interest in that whole involvement because I had a firm belief in their positive, proactive, interactive work with the public in that the environmental resource they were dealing with was solid waste management, recycling and litter control. But the principles behind that, I could see, were applicable to any resource management issues and mainly water. My goal was then to come back with those experiences and translocate those experiences into the water field and deal with water conservation in a similar manner.*

Liz expressed her view regarding changes in Ken after this broadening experience.

> *One of his guiding philosophies is something called the 'normative system change process' how you change people's values or norms. He is a master at doing that. He is also very believable, when he is in front of a crowd, people just believe him. He is passionate about the environment.*

Development of the personal relationship

Liz noted that "we stayed out of personal matters in the early part. I knew that he taught skiing, I don't know how much he knew about me". Eventually the pair began to have a more personal relationship and Liz found Ken to be "a very quiet man with a wonderful sense of humour" and also an accomplished artist who made bronze sculptures. He has been married to the same woman for twenty-five years and is now a grandfather.

On a personal level, Liz stressed "I am the kind of person who really likes to know how people are from the inside out". So they talked about Ken's upbringing and the love of the mountains and the land which led him to earn the rank of Eagle Scout. Ken confirmed this stating, "I think that love for the environment and involvement throughout my life and my career does stem back to my activities in boy scouts". As an adult he enjoyed landscaping and that was a tie to Liz's mutual interest in gardening.

She also knew that Ken had been trained as an anthropologist. Ken confided in his interview that he went to university fully intending to be an engineer, when he took an elective course in anthropology and ended up switching majors. He felt that this choice, "got me into the physical sciences, the human resource sciences, the historical sciences, geology and a number of other things and it really started giving me the background on man's relationship to earth". He later studied environmental science and planning at the master's level. Of his environmental passion, Liz says the following:

> *At the same time, he has a world view that is very ecological. Because he is a very gentle person and I think because he has this artistic side, I found him very approachable. He would never pontificate at me. He was never telling me stuff. He would ask me questions.*

Enlargement of the professional alliance

Later on, Ken continued working on water conservation theory and planning xeroscape gardening while Liz dealt with the impact statements for a future dam. She described their working relationship and the corporate atmosphere of the early eighties.

> *We sat next to each other and he was coming back into an organisation where they weren't sure they wanted him to come back because after all he was an 'environmentalist' and all environmentalists were bad. I felt he was an ally - his attitude, his beliefs about the environment, his understanding that dams are not the*

> *only solution, but they are part of a solution. I felt that I had an ally in my camp. I felt that I had been the lone wolf for a long time.*

Ken characterised himself at that time, "I was weird enough at the time - a bug and bunny person from the seventies. An environmentalist had to be a little bit wacko. But over the years it was a mutual belief by both of us that something could be done. The life training experiences I was getting, I was sharing with Liz and visa versus I was gaining things back from her". Professionally, they attempted to convince people within their own organisational department that conservation could work. Liz described their strategy.

> *Ken has a chart about how you get around the gate keepers -media, government, business industry, civic organisations and schools. What he is saying here is that when you get the general public involved, they put pressure on some of these gatekeepers and then you can work at solving the resource problems. That to some degree has worked here at Denver Water.*

As Liz's career progressed and her philosophical basis for environmental education broadened, she and Ken enjoyed a mentoring relationship that has both personal and professional aspects.

Networks, opportunities and models

The relationship continued to evolve and Liz related, "I got a chance to see him at work with his values and learn from him and we talked about everything". She credited Ken for opening up new networks outside the workplace which consisted of the Forest Service people whom Ken met through Gary, his own 'supra mentor', and Ken's personal contacts within the Colorado branch of 'Keep America Beautiful'. Ken gave Liz opportunities to expand her communication skills with various groups.

> *He did offer me opportunities because that is the kind of man he is. He would say, 'Why don't you go talk to this Kiwanis Club, you can do as good a job as I can do. Here are the slides, I've written the speech, but I know you will never do it like I would do. You go try it'. It*

> *wasn't a delegation, it was an offering, almost more like colleagues.*

Liz learned from Ken how to use the 'Peter Singe Model' to gather information needed for environmental issues. She described the process.

> *'Participatory listening' is where you go out and do the token things - you ask them and dutifully write it down, but do what you were going to do anyway. 'Reflective listening', according to Singe, is you go out and ask these hard questions and you shut up until people tell you something and then you take it into account and see if there really is a possibility of doing it or not. Ken has always done that and I think he learned that here. So this is a model that we used to get water conservation going here.*

Liz used these enhanced skills as her job took her into schools presenting programs for grades K-12 and doing in-service for teachers. She remarked that over the years, "I learned about environmental education by having to learn how to answer kid's questions". She also increased her knowledge through her own network of Western Interpreters Association which she characterised as "mostly us bureaucrats in local, state and federal environmental education programs. That was during the time of James Watt and we couldn't call it environmental ed".

Mid-career - rift and repair of the 'prime mentoring relationship'

After ten years at the Water Board, a new job of conservation officer opened up and both the mentoree and her mentor applied for it. Liz found that beside the teaching skills she had perfected, she had also gained new leadership skills as a volunteer for different programs. She reflected:

> *I had really begun to discover some of my own power as a leader, which is hard for me to say, but I think it is true in that respect ... as a white woman at middle management, those are limitations in a white male engineering organisation ... I would have to be in a position where I would have a little more power and*

> *leverage. So my attitude in bidding on that job was real balanced, I wasn't pressured about it, it didn't mean the world to me. I didn't know how it would affect Ken.*

Liz felt that Ken, on the other hand, was "so strong in his vision for environmentalism" that it had annoyed some superiors. Over an afternoon drink, Ken admitted that even if offered the job, he probably wouldn't take it because of the personality conflict. Liz reasoned, "and so for me that was the break through that gave me permission from myself to accept the job because I knew that I wanted to keep Ken around". Liz was offered the job and she assessed her feelings about eclipsing her mentor.

> *But the truth is I can communicate with Ken and I can take Ken's ideas, soften them slightly and sell them to other people. But Ken is where I get many, many of my ideas about how the world works. He has been just priceless to me. I will tell you that the roughest part of our friendship was that year right after I got the job, because he felt very crushed. We both knew that he deserved it, he had the background and the experience, there were just these personal things in there. For him to go from being my mentor to being my employee was even more difficult for me than for him.*

Ken supplied his own reflection on this turn of events:

> *We have shared some really highs and some really lows. We have laughed together and we have cried together. So there is that very special and unusual bond ... both of us let the needs of the present and the needs of others control the growth of us personally too much. We have been bound by the professional bureaucracy.*

Ken is still one of Liz's employees in her division and she reports that after about a year, the rift began to heal and she considers him one of her closest friends and working allies.

> *So that was one turning point in our relationship. We didn't talk about it for a number of months and then later we laid it on the line and I said, 'You are too important*

> *to me, we have to talk about this'. I also knew in my deepest heart of heart, that if I ever had to fire him as my employee, that I could do it with enough love and compassion knowing that he would go on to do something much better than being stuck here. I still feel that way. If I bounce ideas off of Ken, I know that I am making better decisions, we are a great team. He brings tremendous skills to this group.*

This incident between Ken and Liz shows an important departure from the end of relationships reported in the literature which are described as 'hostile' (Levinson *et al.*, 1978). In analysing why this relationship did not have an irrevocable break, the participants kept referring to their personal as well as professional bonds and their cohesiveness regarding the underlying principles and goals of environmental education. This 'mentoring glue' helped mend the rift and allowed for a new stage of their relationship to develop.

Reciprocity in the relationship

The pair reached a stage where mentoring became reciprocated. While both mentoree and mentor had learned the process of group facilitation for environmental problem solving, Liz acknowledged that Ken is beyond her in his understanding of ecological systems because of his scientific background whereas she had focused on teaching water conservation. Yet, she began to bring added strength in managerial skills to the relationship.

> *I'm still the rookie and he is definitely the mentor in that scientific stuff. In the management, the people skills, the two way communication, I am ahead of him and he is very willing to learn.*

Liz thinks that her liberal arts background helped her become a lateral or 'systems thinker' - a type of "integrated resource person who looks at all the side effects". Ken concurred with this opinion and explained why he now considers the relationship with Liz to be collegial.

> *With Liz, I have probably learned as much from her, if not more, than she has from me. I think over time her capabilities far exceed mine as an environmental leader*

> *... Her organisational skills and interpersonal skills are so far ahead of most of us that it is phenomenal. I just look at her in awe. So maybe it is my scientific and mechanical side if you look at hers as the business side. There is a pairing or team.*

Team building vs hierarchy in environmental organisations

Although Liz realised that some environmental organisations do run in as hierarchical fashion as corporate business, she drew attention to the fairly new Colorado Alliance for Environmental Education, noting, "we formed it with the context that it would be a team effort ... We had the vision that this needed to run like a sound ecological system, where everybody had a part to play and there was no one single top most important person". She went on to say that "many of us in environmental education have very sound friendships, we connect with one another because we have a common vision". Ken confirmed the success of this style of management, remarking:

> *I think we may have accomplished that over the last ten years. I use the term 'we' not to refer to me, but to refer to myself and Liz as a team and then beyond the two of us to the other people we managed to bring on board, so to speak ... But the team is way, way bigger than that, just a close knit family.*

Liz explained her current philosophy of environmental education which stresses long-range planning for the next twenty-five years that can anticipate technological advances and pitfalls. She referred to a poster that she has had for twenty years which summarises a holistic philosophy "backed up by exceedingly rigorous science".

> *'The society which scorns excellence in plumbing because it is a humble activity, and tolerates shoddiness in philosophy because it is an exalted activity, will have neither good plumbing, nor good philosophy, neither its pipes or its theory will hold water'. That is exactly what I mean, we have to have good theories about the way that the world works and I think we have to begin to focus on the ecological model for the way we run the*

> *world and use what has been sustainable for these millions of years instead of the business model which clearly is not sustainable.*

With the encouragement of her mentor, Liz is currently finishing her Master's Degree in Business Management and commented, "I am looking at how to apply the lessons of the environment to business ... If we can talk about what we have in common, meaning our future, rather than what we want them to change we will be much more successful".

Liz is unusual in that she has daily contact with her mentor, but she contemplated the effects of not having Ken around saying, "When I think of working some place where Ken doesn't, it would be very unfulfilling to think about that. Our relationship would change somewhat, but he wouldn't be out of my life". After twenty-one years with her company, she says, "I am exploring whether I want to remain in this kind of a job or be a college professor which tantalised me a lot ... I am also at the point where I see myself shifting from the exploring, rookie manager to a much more experienced person".

Looking toward the future

Asked if she would be willing to become a mentor herself, Liz replied, it is impossible to guarantee a new mentoree a job in her organisation, but , "what I can do is help this person round out his or her personal, professional, spiritual and all those other realms of their being, so that the journey is fuller and more rewarding, but where the journey will lead I do not know". Ken commented on Liz's ability to become a mentor.

> *I think her role is expanding as a mentor-capable person and my role, I think, is narrowing somewhat because I have chosen to become more specific rather than general in dealing with future environmental issues. I have narrowed my roles down to landscape architecture and what we can do about building physical systems that are more sustainable. She is more into building the personal systems, the human systems.*

Manager as coach versus mentor

Liz sees her current position as 'manager as coach' with a mission that embodies the goals of environmental education while taking into consideration the needs of various stakeholders who rely on water. She outlines the current mission:

> *It is my job now to make sure that we have a vision and a mission here that encompasses all the good stuff that we want to promote about water conservation and still takes into account the goals and values of the other people ... It is my job to do some of that bridge building and negotiating. It is more now at the management and communication levels than the teaching.*

Liz was able to distinguish the characteristics of a coach and mentor by distinguishing the personal side of the relationship.

> *The coach, to me, is not a powerbroker, she has the best interest of the team at heart. A mentor considers the best interest of the person. To me a mentor is looking at rounding out the whole person. A coach is focusing on a skill. But I think everybody on my team knows that I really care about them as human beings. The mentoring would be more focused; it would be asking a lot more questions.*

Those questions would probe personal values and goals and evaluate what kind of support is needed from the mentor. In terms of organisational mentoring, it might mean saying to the mentoree:

> *... I still want to be your friend, I am still very interested in your success, but I can't offer you the kind of help that you need to form now. You need to be spending your mentoring time with a new mentor. Probably a white male who is much higher up in this organisation who can give you the guidance to play through the old boy network. I can't do that.*

Pre-acknowledgment of their mentoring relationship

The relationship between Liz and Ken is one of the few instances where the mentoring had already been acknowledged before the intervention of the researcher and Liz disclosed:

> *I had told him that before you asked. But he was so embarrassed by it that I don't think he could hear me. He is such an introvert and he is so shy about his skills ... I had to tell him. ... I think it is partly his joy in living that attracted me, because he has such a good sense of humour.*

However, when Liz was asked to detail the development of her mentoring relationship with Ken, she said, "This will be good for me because I will have to analyse it and I haven't done that really, I have always just sort of been in awe of it". She explained that "for some reason what Ken was saying to me just clicked. I was ready to hear it. He was delivering the message in a way that was very comfortable to me. He was delighted that I was interested". Ken explained his unconscious style of mentoring, explaining:

> *I haven't really focused on the process of mentoring and the deliberation of mentoring. It just happens. It is meeting someone and finding somebody having a need and being able to draw on other resources, either personal or knowing people, again it is that whole networking issue, putting the resources together to help that person solve their problems. If that is mentoring, I guess I have done a bit of it ... So when you asked if I would share my experiences as a mentor, I really hadn't pictured myself that way. It was more that I had learned something great from somebody yesterday and I passed it along to you today. Maybe I'm just a small joint in the pipeline of life's information.*

This serendipitous, informal mentoring developed into a sustained twenty year relationship and Ken reflected on the possible reasons for its effectiveness.

> *Going through all of it, it is an innate sense or gut feeling that this person is really committed to the ultimate cause of preserving life on earth as we know it, at this point anyway, keeping the quality, protecting the resources. The commitment was there. I think that strong interaction, especially with Liz, was a sharing of that belief and probably built a real strong bond.*

Ken's remarks reiterate important aspects of mentoring: a spark of personal interest, professional integrity and mutual respect, and a shared philosophical commitment.

Effects of mentoring on leadership

In her response to the benefits of a 'mentoring cascade' for environmental education leaders, Liz summarised:

> *I don't think we can bring everybody in environmental education to be leaders of corporations. They may end up being tremendous leaders in volunteer groups like the League of Women's Voters, like CAEE (Colorado Alliance for Environmental Education) and that is where they get their experience and that is where they gather their friends around them. Or maybe some of these people become leaders by simply being introverts who are models on their properties, in their home, but they have done everything possible to be living in harmony with the environment. It is leading by example, as opposed to having a job where we get to make people do stuff. I think that is in the past and is not the way of the future at all.*

Liz said that Ken would probably not admit to being a leader in environmental education and commented, "But I don't know if I can see a particular value in getting them to admit it, if they are doing what they love to do and it is making a difference, who cares what name we give it". For Liz, her own initiative and the influence of her 'prime mentor' have helped her become a leader. She has learned to appreciate and understand the principles of environmental education which she embodies in her present work and foresees as the key to the future.

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The supra mentoring relationship - Ken and Gary

In order to understand the cascading influence from one mentoring situation to another, the relationship between Ken and his 'supra mentor', Gary, needs to be explored. Knowing that Ken's positive stance on environmental education stemmed from his youthful involvement in scouting and his training in anthropology, it was important to analyse the kind of influence Gary brought to bear on his attitudes and actions. Ken described how working with Gary opened his horizons.

> *I had wonderful opportunities to be involved with people in the National Forest Service and to take some of their professional, yet volunteer, group workshops on natural resource management and the need for environmental care. I went through their training program and that just kind of expanded my horizons even more exponentially.*

It was during this training, that an intense, but fairly short-term, relationship began with Gary who is Ken's contemporary in age. Ken characterised the initial attraction.

> *There was one particular person in that whole training program that I think I related to very well. And I think he doesn't know it and I never really said anything about it, but he was an inspiration to me along the way about what can be accomplished beyond our capability as an individual, if we come together in small teams.*

Ken felt that Gary helped change his conservative approach to environmental education, recalling a watershed moment:

> *This is a person who had me sticking my nose into the bark of a ponderosa tree to see if it had a vanilla flavour. It broke down those barriers of inhibition with people standing around. I am a relatively conservative person, but I think that helped me leap out of that mould.*

Building a facilitation team

Although Gary didn't recall exactly the first time he met Ken, he knew that his name had been suggested by another forest supervisor whom

Gary highly regarded. After an initial workshop, some people were invited back to become part of the facilitation team 'as a kind of intern'. Gary explained that process.

> *I think a great facilitator is someone who has belief in their own ability that he/she can let go and allow the group to freewheel and explore ... and still know that there is an organisation here, that it is not anarchy ... I know the direction that this is going in and if I need to, I can pull it back. The people I am seeing, the Ernie's of the world (Gary's hyper mentor) are facilitators par excellence. They have a tremendous self-confidence, but they also have a tremendous confidence in the group. I definitely think Ken and I did that for a while.*

Ken saw in Gary the same sort of 'commitment' that he had seen in Liz. This shared belief was sketched by Ken.

> *Just Gary's positive attitude to earth's resources and what we could do. It wasn't a fatalistic kind of thing. We really were in charge of our destiny. He had an extremely proactive, positive attitude on life. It wasn't a go out and spike a tree sort of thing, it wasn't a radical, militant approach, it was more we can actually do something about this in a proactive way.*

Gary confirmed this perception with his statements about the developing relationship.

> *Ken was good with people and he was available. I think what happened is that a relationship was built beyond the workshops and we began talking about his program at the Denver Water Board. He had done a marvellous job. Back in those days environmental education was just at the beginning edge, you know how do you get it going, how do you work it. I would talk over various things I was doing, so it developed beyond the facilitator stage.*

In discussing what Ken may have meant by his 'proactiveness', Gary offered this explanation.

> *I have always believed in the tremendous power of people to come together ... People who have a genuine concern or problem are going to be impacted by that decision. Those who want to roll up their sleeves and become part of the solution are the kind of people I want to be around. And so I think having that kind of trust, I think that is where Ken gets the idea of 'proactiveness'.*

Ken began to see not only professional qualities he admired in his mentor, but also personal characteristics which he felt worth emulating.

Transferring the skills of the supra mentor

One of the things Ken felt he had learned from Gary was how to transfer to others various processes for thinking about environmental education. A process of self-discovery was emphasised to facilitate people finding solutions to their own problems, "but all geared around the environment". This account gels with Gary's memories when he recalled that their professional interest in conservation brought them together.

> *I do recall a workshop where Ken really impressed me. He was on the training team staff and I had invited him to participate. I recall him working on some other things. He was getting involved in the Water Conservation program at the Water Department and he would call and we would go have lunch, talk and share ideas. Yes, I remember Ken quite well.*

Beside the practical consideration that Ken's company was lending the Forest Department their employee at no cost, Gary described Ken's personal attributes such as integrity and trust that made him a memorable, if unacknowledged, mentoree. "What I recall about Ken was a definite sincerity. Ken was one of those who had definitely demonstrated some skills in facilitation. I think the other thing is that it brings people together who have an affinity from their professional standpoint."

Dynamics within the mentoring cascade

When speaking of how to get the issues of environmental science across in an educational format, Ken described the dynamics of reciprocity in a mentoring cascade from the 'supra mentor' to the 'prime mentor' to the 'alpha mentoree':

> *The whole process of the mechanics. Well Liz is a trained educator so that strength I was learning from her on the one side. On the other side I was getting the life experience training from people like Gary and people from 'Keep America Beautiful' and passing that whole system or process back to her. And that was reinforcing the two different kinds of educational philosophy all around the central focus of the environment and what could be done to improve it or protect it. So I think it was 'let's go dance around the floor again and see what we can find'.*

Looking back Ken felt that he had met Gary "early in his career because that was almost twenty years ago". Ken knew that Gary had moved out of the Forest Service and into private sector business but said, "we have pretty much lost touch of one another. I've essentially talked to him once over the last fifteen years". One may wonder if this would not make Gary more of a substantial role model than a mentor, yet when Ken was asked if he wanted the researcher to make the call to Gary, he said no, he wanted to tell him how he had felt all these years.

Contextual background of the super mentor

During Gary's interview, he described his own childhood experiences in the environment, "camping was wonderful in those days because nobody did it. You would go to Yellowstone or Rocky Mountain Park and you would have your pick of the campsites. I think I developed my love, especially for the Rocky Mountains at a very early age and by the time I was in eighth grade I knew I wanted to live in Colorado". He further explained, "Half of it is that I had developed a love for the traditional outdoors, but the other half is that I loved people and my business is people and I enjoy being with people". This love of people is reflected in Gary's choice of major at university, a double degree in social science and communications, and his first career in teaching.

As a high school social studies teacher, Gary had attended a Forest Service Environmental Education Workshop in 1973. He remembered:

> *I really didn't want to go. I went to it and I thought it was a bunch of mickey mouse for the first day and a half and then it began to dawn on me that these people were really teaching an educational method simply using the environment as a vehicle and I began seeing the application of how to apply that teaching methodology back in my profession. I really got turned on to that part of it. The environment, well, that was fine, it was ok, but really it was the teaching methodology that got me turned on.*

Being a new teacher with a young family, he needed to pick up some summer work and was able to become a seasonal employee of the Forest Service. His communication skills were used to help implement the new National Environmental Policy Act which had just been passed and required public participation in decision making. However, his employers also began to make use of his teaching skills.

> *Part of my job as a seasonal Forestry service employee was working with organisational camps at Pike National Forest. So I took the 'Discovering Your Environment Series' and wrote up a mini-program and geared it toward kids rather than adults. Part of my job was to give ranger talks and I started using the mini-series and the owners and staff of the camps just loved it.*

Meeting his 'hyper mentor' - *Ernie*

As Liz recollected the afternoon tasting stems of grass and discussing philosophy with Ken and Ken recalled learning to smell the vanilla scent of the ponderosa tree from Gary, so too, Gary remembered the beginning of his mentoring relationship with Ernie which would last over twenty years.

> *I remember the very first time that I met Ernie. The regional directors were meeting in Denver and had invited me to attend. So we went around the table and they were all telling who they were and what they were responsible for. When it got to me I said, 'I am Gary and I'm just a seasonal employee'. And I'll never forget, Ernie stopped and said, 'There is no such thing as JUST a seasonal employee. You are a seasonal employee for the Forest Service involved in environmental education and we are happy to have you here'. I'll never forget that. He was kind of known, and still is, as the father of the Forest Service Environmental Education program.*

Four years later Gary left teaching to become a permanent employee of the Forest Service and was invited to participate in their national training team for environmental education workshops. Later when he was appointed coordinator for the Rocky Mountain Region he related, "that is when I really became involved with the man who was my biggest mentor, Ernie, who was my counterpart in Portland for the Northwest region".

Living by environmental education principles

Gary observed how Ernie was able to take a strong philosophical stance regarding an environmental issue. He characterised him as, "a man who was incredibly patient, a man who truly believed in people, a man who certainly had a very strong set of principles and lived by those. It wasn't just words". Ernie was "the one who really helped develop the environmental education program and helped to sell it politically inside the agency". However, according to Gary, Ernie was also "the one who kept it from becoming politicised like a lot of the other agency programs had become. We were under tremendous pressure to hardsell multiple-use management and Ernie led the defence in saying, 'No, that is not what we are going to do. What we do leads a person to believe that multiple-use management is a good way of managing, but we are not going to sell it'".

When trying to analyse the attraction that this 'hyper mentor' might have found in someone thirteen years his junior, Gary remarked:

> *It beats the heck out of me. I think because - we have never talked about that. I don't know because my path even in the Forest Service went a very different direction than Ernie's ... maybe it is the common link of the fact that I also love people. I am a darned good facilitator and maybe he saw some of that ... We collaborated on some other things beyond environmental ed, but the common denominator now that I'm thinking it through is probably group facilitation and it can be applied to so many things.*

A close social relationship did not develop between Gary and Ernie as it did between Ken and Liz. Part of that could have been due to physical distance between two different regions in different states, but Gary confirms, "It has always been very much a professionally based relationship, but it goes deeper than that and I think maybe we see similarities in each other". Although the two men did not directly work on joint projects they did collaborate on writing the agency's public administration handbook. Gary felt that the effectiveness of the mentoring went beyond this level, asserting "working with Ernie and a few others. I learned an awful lot. He was a tremendous facilitator and a tremendous individual".

Modelling the hyper mentor - a watershed moment

During the developing years of the relationship, Gary recalled a memorable account of modelling Ernie's environmental education techniques when negotiating between the National Parks system and the U. S. Forest Service stating:

> *We took those same facilitation principles and really applied them and made them work in a very controversial setting. I can recall that I was assigned the whole public participation responsibility for developing the land use plan for the Indian Peaks Area. By using the facilitation skills learned in the environmental education, I conducted a workshop for those interested in the project so they could see the inter-relationships. That was pretty much a watershed effort in my life considering it did come out in a positive end -*

> *it was made into a wilderness area. It actually avoided a lot of confrontation and activism. I saw those things I learned in environmental education transferred to a different arena, but still being incredibly successful.*

Influence of the hyper mentor during career transition

When asked about Ernie's mentoring influence on his career decision to change from the security of a government Forestry job but necessitating a move out of Colorado to the vagaries of starting a private business, Gary remembered that Ernie offered him personal encouragement through calls and letters. He related the following:

> *My involvement with environmental education was pretty much winding down ... at the same time I knew that I was blocking a key position. I could have stayed there, but I knew that eventually I would have just gotten tired, bored and I had always wanted to try my hand at running my own business ... So I decided to make the break and Ernie encouraged me to do so.*

Gary did run a successful business for three years dedicated to community problem-solving in the environmental arena, but then he was offered a position with his present organisation. He said that his current company regards him as a government and public affairs liaison and not an environmental educator, because "we are in a very controversial business, the hazardous waste treatment business". However, when he defined his personal philosophical views some of those 'seventies' goals still comes through.

> *I believe in the tremendous problem solving power of people working together as they do here. My job is people - and right now the big passion of my life is working with small, rural communities to help develop and survive into the next century, a very tough road for them competing in a world economy. It is a challenge ... many of the same aspects of environmental education are still very prevalent in my life and are involved in the whole economic development. So I don't see a great*

> *difference there at all. It is a process and problem solving aspects.*

Gary pinpointed some of the differences between the environmental education approaches from the seventies and those of current times. His comments echoed some of the themes brought out by Liz - economists and environmentalists have similar goals, but figuring out how to reach them is the problem.

> *People are coming to understand through education that you can't have a healthy economy without a healthy environment and probably visa versa. The two go hand in hand. So where I am with environmental education today has certainly taken a different route from where I was back twenty years ago. Back in the seventies we didn't look a whole lot at the economic situation and link that, although there was a component in the program we were using in the Forest Service. It was kind of an afterthought, whereas today, that particular component has become so paramount in affecting the environment, that environmental and economic relationships have become prevalent.*

Sustaining influence of the hyper mentor

Today Gary combines his facilitation skills with the techniques of 'informal networking' which he sees as 'a tremendously powerful combination". He has just written a new book called, *Power of the People: working with grass roots activism.* In it he stresses one of his own principles, 'there is no compromise for truth'. He related this to his dual role as mentoree/mentor:

> The point I am trying to make here is that people need to develop their own principles, but stay with them. I think that is one of the things I mentioned about Ernie. He was a man of principles. And I also see this in Ken. He is fun to be around, but at the same time he is a man of principle without being dogmatic.

Even in his work today, Gary still gives credit to Ernie's influence, "I learned so much from Ernie. He and I still touch base from time to time

... I am the facilitator for this company and use those skills I learned basically from Ernie through the Forest Service Environmental Education Program". He outlined how these methods were applied to a project in a western Nebraska community, "creating a partnership over the last seven and a half years resulting in the building of a hazardous waste incinerator with support from the local people, the governor, the state and again applying, nothing strange or new about it, simply applying the things I had learned".

Although an interview was not able to held with Ernie, Gary said that he is retired, but is still doing problem solving facilitation meetings. Their association is infrequent, but has not diminished in effectiveness according to Gary, "Ernie called me last summer. He was facilitating a session for the Forest Service on land-use planning over here in Golden. He called and said he was in town and it was like no time had passed between us at all".

Formal versus informal mentoring

Gary was asked about mentoring opportunities within his company. He was able to distinguish the formal mentoring schemes he has seen tried in private business from that which he had experienced with Ernie and subsequently passed on to Ken in the environmental education arena:

> *The interesting thing behind that concept is that mentoring was a big buzzword word a few years ago, but it was artificial. ... When we tried to develop a mentoring program, it totally failed because it became visible ... It turned out to be a political thing as to who your mentor was or wasn't. Whereas in recalling back in the heyday of my involvement with environmental education, it was an informal thing, it was all there, but nobody ever called it that.*

When asked his reaction to Ken's call which acknowledged this mentoring relationship, Gary said, "We caught up on what he is doing now, what I am doing, but it was essentially as if no time had passed". Remembering that they had all started into environmental education when they were relatively young and it was a brand new movement which was concurrent with civil rights and Vietnam protest movements, Gary said he thinks this 'tumultuous time did a lot in shaping those of us who were involved. I know the people that I worked with were all kind of young and idealistically motivated". Yet twenty years later, Gary was able to end his interview on being a mentor in environmental education with another one of his personal principles, "the degree of trust I gain is directly commensurate with the trust I display". He applied this maxim to his relationships with his 'hyper mentor', Ernie, and his own mentoree, Ken, "I am willing to continue to trust him even though years have gone by and we haven't had constant contact".

When asked if there was any unifying theme for this particular mentoring cascade, Gary thoughtfully replied:

> *I think, the thread was an integrity involved with all these people, an openness, a friendliness, a willingness to invest time, not for any gain ... It is what these people who had the biggest influence on my life had, it has probably been that one thing, tremendous integrity. So maybe that is the one profound idea that came out of all this. And I thank you for giving me cause to stop and reflect and think about mentoring.*

The external patterns of this chain of mentoring stories highlight learning facilitation and leadership skills in the controversial setting of environmental education, while the internal threads are those of recognising personal and professional integrity, respect and trust. But another motif comes through as well - the exposing of mentoring relationships. Gary admitted that he and Ernie had never actually talked about 'mentoring'; Ken said that he wanted to be the one to tell Gary how he had felt all those years; and Liz had already told Ken she considered him her mentor. The participants in this chain contrasted formal and informal mentoring comparing the results of a contrived situation with ones that developed from the natural consequences of mutual attraction between individuals. All three spoke of needing more time to reflect on this issue. Liz summarised it best saying, "I am glad you are doing your mentoring research in environmental education because it has been too informal, if it has happened at all". Perhaps the gradual acknowledgment of these participants' experiences will point the way for more deliberate mentoring for future environmental educators.

5.3.3 Record 3C- Pattyanne, Carol, Robert and *Grant*

Record 3C will continue to test the evolving theory that if mentoring becomes acknowledged, rather than merely perceived, it may become deliberate and may begin at any level of the mentoring cascade. For this group of participants, mentoring began serendipitously and continued informally at the 'hyper mentor' level, became recognised and verbalised at the 'supra mentor' level, outwardly acknowledged at the 'prime mentor' level and became a deliberate mentoring process for the 'alpha mentoree'.

This story begins from the perspective of Robert, the 'supra mentor', who as a young boy accidentally encountered a professor from Yale doing field studies in Colorado who encouraged his childhood passion for butterflies. As an adult, Robert, pursued this interest at university education where he met his major influence in environmental education, Grant, the 'hyper mentor'. The record moves on to Robert's association as 'supra mentor' for Carol, a teacher he encouraged to make a bold career move into a leadership position. Finally, Carol is seen as the 'prime mentor' for Pattyanne, the 'alpha mentoree'. A deliberate personal relationship and professional mentoring alliance developed as Pattyanne debated a career transition within the field of environmental education.

Early childhood interests - the boy and the canal

In the prologue to his novel, *The Thunder Tree: Lessons from Urban Wildland* (1993: xv), Robert described going with his mother to her favourite ravine in Seattle.

> *On one of these pilgrimages she took me along, and I saw in her face the meaning of place. At Ravenna Park she made a personal connection that transformed the way she looked at the land for the rest of her life ... My own point of intimate contact with the land was a ditch.*

At age six Robert moved with his family to Aurora, Colorado where his neighbourhood play area was farmed-out prairie lands on the east side of Denver. His special place, a manmade irrigation canal called the Highline Canal, was remembered as a "weedy watercourse" which he said "had been my sanctuary, playground, and sulking walk. It was also my imaginary wilderness, escape hatch, and birthplace as a naturalist".

In his interview Robert asserted that his childhood passion for molluscs was "difficult to satisfy in Colorado which is inland and landlocked and I eventually shifted over to butterflies which were a lot more accessible".

A variety of mentors

One day Robert was at his step-mother's cabin in the mountains situated close to the Rocky Mountain Biological Laboratory and reminisced:

> *By sheerest coincidence when I was twelve years old in 1959, I happened upon a number of the scientists from that lab. I was simply collecting butterflies near where my father was fishing and I happened upon men who were out in the field with their graduate students and their butterfly nets and I thought I had died and gone to heaven. It turned out to be Charles Remington of Yale University and Paul Erlich, the well-known population prophet and biologist from Stanford University as young men.*

Over the next several summers Robert recalled that the scientists "entertained my curiosity and questions and enthusiasm" even letting the boy come to their own cabin.

> *I would sit in the corner and listen to erudite butterfly talk. And I learned about the Lepidopterist Society which I joined at age eleven and it actually held it's annual meeting at this laboratory in the spectacular Rocky Mountains out in the setting of an old ghost town and ex silver town where this laboratory is located.*

As Robert continued his schooling he mentioned that he "did not have many teachers who were interested in natural history" and in high school he was unable to get scheduled into the classes of those who were. He circumvented this stumbling block by joining extra curricular clubs and taking fieldtrips outside the formal school environment. He acknowledged these influences:

> *... in particular a woman who was a bird lover in my junior high school and a man who was also an ornithologist and a biology teacher ... who ran an*

> *ecology club ... The two of them showed me that there could in fact be teachers of biology who really did care about natural history ... So those were early mentors of mine as were the amateur butterfly collectors whom I met and who took me into the field and showed me what it was like to track down animals in their natural haunts and what it was like to be a person consumed by the passion for collecting and for learning natural history.*

Following his passion

After high school Robert went to the University of Washington to study zoology and forestry, he found both of those areas had too many blocks for actually studying natural history. So like Paul and Cem (Record 3A), he made up his own college curriculum. He took natural history classes which he said "were taught for the most part by relic, remaining old naturalists on the faculty who had not yet been purged" and he described the results:

> *They could see what I was trying to do which was to build a natural history education and a conservation education. So I finally was able to create a self-styled degree in the style of the sixties (1969) which was called Nature Perception and Protection.*

Meeting his hyper mentor - Grant

While working toward his masters degree in the College of Forest Resources, Robert met a special professor named Grant whom he describes as "a very true mentor ... and certainly my major mentor for environmental education".

> *... you probably know his name as the author or editor of* Interpreting Our Environment, *the greatest textbook in the field of nature interpretation. ... I did my master's degree with him writing my first book,* Watching Washington Butterflies *as my Master's thesis. Between himself and Hazel W. the ninety-four year old, still-living doyen of the Seattle Audubon Society I managed to get this project approved as both master degree and*

> *published as a book by the Seattle Audubon Society and that was the beginning of my writing career.*

Grant fulfilled many of the functions identified for a mentor. He allowed his mentoree to work with him, encouraged him in seeking jobs, and became a life long personal friend, sharing his family as well as himself. Robert characterised the relationship from his point of view:

> *Grant was certainly the best mentor one could have had in the field of environmental education and I had the great pleasure of working closely with him and being his teaching assistant for a couple of years and taking part in a lot of different activities with him. He was super too in helping to get jobs for his student. So I worked in a number of interesting environmental ed and interpretation positions during the years that I was with him.*

Robert received a Fullbright Fellowship to England and claimed it was a pivotal time in his life pointing him back into "a scientific approach to natural history, particularly bio-geography and its applications to conservation" and during that time he founded the Xerxes Society, the invertebrate conservation organisation named after an extinct blue butterfly.

In a pattern of circularity, Robert went on to become a PhD student of the Yale professor he met during his summers in the Colorado Rockies. His work in bio-geography studies still revolved around his childhood passion and he was able to do work around the world on butterfly conservation issues. After being in England and Papua New Guinea, Robert returned to work for the Nature Conservancy as the land steward managing nature reserves in six north-western states. From 1979-81 he went to work for the World Wildlife Fund in Cambridge, England, where he helped to set up the Conservation Monitoring Centre and co-authored the *IUCN Invertebrate Red Data Book.* Robert described his present position.

> *It is after that I came out here to live in southwestern Washington at the mouth of the Columbia River that I have been living here as a free-lance naturalist ever*

> *since. I write, lecture and I teach for a number of universities, colleges, institutes and so on. But I live here a hundred miles from the nearest major city and live among the nature that is so important for me to be around. It is in an old rural valley in an old pine house. But writing is my primary goal now and so to the extent that it is environmentally oriented, as much of it, is you could say that I am still involved in environmental education. And certainly, I do teach for a number of natural history and conservation institutes. So I guess I have always been involved in environmental education in one sense or another.*

Robert is still in contact with his 'hyper mentor', Grant, who has retired from the school of Outdoor Recreation at the University of Washington, but is still actively working on a number of books. Robert described the reciprocity in this long-term mentoring relationship.

> *I continued to be a good friend of Grant's and know he would certainly say that in the other direction. We stay in contact. We see each other two or three times a year and his family is important to me as he is. Certainly we have steered different kinds of interesting things in one another's direction over the years.*

Although Robert is quite comfortable with the term 'mentor' and used it frequently to describe many influential people in his life, he never said that a mentoring relationship, as such, was acknowledged with Grant. Yet, it is obvious from the characteristics ascribed to the 'hyper mentor' - the respect, friendship, encouragement, support, and collegial working relationship - that Grant did fulfilled that role. Robert ended his own story saying, "that's basically an autobiography leading up to my position as a "freelance, n'er do well on-the-road naturalist".

Becoming the 'Supra mentor' for Carol

So when in this context of teaching, world travel and writing about nature did Robert have the opportunity to become a 'supra mentor' for Carol, a primary teacher with a keen interest of her own in natural history? Again the lure of butterflies was the connection.

> *Actually the initiation came about due to a float trip that we took together through the Denver Audubon Society in 1976. At Grassland Institute where we met one another and she told me that her daughter was interested in natural history. ... It was really through her daughter - Lynelle's interest in natural history that I got to know Carol better.*

Carol corroborated this 'watershed incident' during her interview saying,

> *I had taken another class at the Grasslands Institute in 1976 and had met an individual there who was real pivotal and we have been friends ever since. He is a lepidopterist, he had just graduated from the Yale School of Forestry and this was his gift to himself for his PhD ... He was so bizarre looking with a long beard and his butterfly net in a Volkswagon bus, but he drank and partied like the rest of us. ... I had never met anybody this strange and eccentric and it was completely fascinating. He was charismatic and helpful. He would stop and hold this tiniest butterfly and daintily open up it's wings so you could see the pattern and let it go. He would spend infinite amounts of time with you whether you were a kid or an adult. If you showed the slightest bit of interest, he was there. But his knowledge was even broader, I mean birding and flowers and just the whole natural history thing. He was very good at it.*

Carol discovered that Robert lived only five blocks away from her family in Aurora. So after the institute, they went butterflying on Robert's Highline Canal. He was living partly in England and in Oregon at the time, so they only saw him sporadically when he came to Colorado. He not only encouraged the little girl's natural history interest, but began to act as a mentor for Carol who recalled, "We went hiking and I learned a lot of birding from him and he gave me encouragement. I was just blown away that someone could make their living chasing butterflies and I aspired to do something that outrageous someday".

Development of the relationship

Carol pursued the opportunity to learn from Robert and began to perceive him as a mentor. Robert explained his position.

> *Essentially it was a matter of friendship and spending time together in the field. ... Certainly Carol shared knowledge with me about things she knew like the herpes, the reptiles and amphibians, as I did with her about the butterflies. We took part in a number of activities together, butterfly counts and some teaching and so on. Certainly I think you could say that both of us provided a lens on the out-of doors for one another because of our different knowledge and experience.*

As Robert and Carol continued to meet over the years the relationship developed through personal encouragement and getting to understand their philosophical views toward environmental education. Robert felt it was important that educators have an environmental science background.

> *I think the most important thing is for people to actually know the organisms about which they hope to teach and show the relationships bearing upon our own lives ... And I don't mean just something about their biology, but to be personally acquainted with the species that they are likely to encounter in the out-of doors in their interpretive and environmental ed activities. Most environmental ed teachers don't know very much natural history at all.*

Carol explained that her 'supra mentor' helped her increase her environmental knowledge and challenged her philosophy.

> *Each time that we would go on a walk, I would seem to know birds better or the butterflies or plants and he would notice the changes and compliment me on them and encourage me. I would always learn something new ... identifying this or field markings, or this is useful to know about behaviour. Out of the field, if we were having a beer or over dinner, we would talk about*

> *broader meanings and more the philosophical stuff, but in the field it was very focused.*

Acknowledging the mentoring relationship

Robert remarked, "Well I wasn't really aware that there was a mentoring relationship" and it "certainly was not deliberate". Carol was asked if she disclosed her perceptions to Robert and she replied:

> *I don't know if I have ever told him that. I have told him in more circuitous ways that it was his support and belief in me that kept me going and made me feel confident enough to take the leap that I took. I don't think I actually used the term mentoring, I don't think I actually thought of him in such a large role until I was trying to fill this questionnaire out. Actually, I was sort of surprised, I thought I would put Cheryl until I really started writing it down and it just kept leading to him. It had to be him because he was so pivotal. He was there at the points that moved me, that swung me from staying in the classroom to experimenting in some new directions.*

Carol wrote in her survey responses that Robert had an extraordinary influence on her personally and on her career. She debated about naming Robert as her principal mentor for environmental education, as she had another female who was very important to her in this work. But she finally decided that while Cheryl was an excellent role model for her, Robert was her true mentor and she explained:

> *I had trouble trying to decide between her and Robert on that, but I had to pick the more pivotal period of time for me that really kind of thrust me forward into where I am now and that goes back to him.*

Through the intervention of this research, Robert understands more fully how Carol had considered him a mentor.

> *I acknowledge the relationship now with, I hope, a graceful thank you. I have not realised in the past that Carol considered me a major mentor and I had certainly*

> *not perceived that was the nature of the relationship. So I am somewhat flattered by that fact, but it was not something that I set out to do, to mentor Carol.*

Robert felt that Carol may have seen him as a mentor "partly because of the fact that I was able to be open her eyes to butterflies and to aspects of the natural world that were new to her". But he admits, "I guess that is sort of what mentoring is, so that I will certainly accept that designation". Remembering his own perceived, but unacknowledged mentoring, he disclosed these thoughts:

> *Certainly, I gave that designation to a number of people who might not have thought of themselves as being mentors of mine as well as people who were former mentors like Grant, people who actually helped me broadened my outdoor repertory to broaden my awareness of what is out there in the world.*

Perhaps because Carol was an exception to most primary teachers who have only a general knowledge of the environment, he was drawn to work with her in this unacknowledged mentoring relationship saying, "What I do remember about Carol is, as a teacher and as a naturalist, she had great verve and energy and enthusiasm, but not a lot of confidence in what she knew or how she was goings to be able to deal with that".

Robert went on to stress that "the most important mentors are those who will not only show enthusiasm, reward effort and reinforce an interest in natural history and sharing it, but also are able to physically share his personal knowledge of the field". Robert put his philosophy into action as they continued to meet sporadically over the years, always taking time for field excursions and exchanging ideas. He felt that the personal side of the relationship developed because "it just seemed to be a growing awareness of a common interest in nature that people who care about these things feel in one another". He remembered the times that he and Carol were in the field together in Rocky Mountain National Park, out on Highline Canal and at Barr Lake where Carol worked for awhile, and stated, "places like that gave us an opportunity, through our own friendship, to reflect off one another and probably for both of us to develop as better naturalists and better educators".

Dormancy and reactivation

Although this mentoring relationship started over ten years ago, Robert and Carol may only see each other intermittently and yet there is a continued interest shown.

> *I haven't seen very much of Carol for some years now although we do stay in touch and I look on with interest at her marvellously developing career ... I'm sure she has had other people, too, who have been important to her development. I'm flattered that she feels that I have been a mentor to her. So I think that I would say that Carol is certainly a good choice as a person for you to look at because she has had such a meteoric rise in her career. I don't mean just big highs, but altered positions. Carol is an excellent person to be looking at.*

Having finally acknowledged this mentoring relationship with Carol, Robert offered a summary definition, "I think a mentor is actually anyone who helps to lift the scales from your eyes and certainly those people are the ones we count on to continue the culture". Discovering common attributes in people like Robert and Carol is important to understanding how the 'culture' of environmental education can be transmitted through a mentoring cascade.

The prime mentor's contextual background

Carol said she has probably been interested in the outdoors and natural things since as early as she could remember. She gave an example that was reminiscent of Liz's garden experience (Record 3B).

> *I was probably two and there was big frog in the irises outside the back porch. That was my first recollection that there were wild things outside that door. I think I was afraid of it, because it looked right at me and I wanted to go back in the door, but I couldn't get in. I remember standing at this door with the big frog. It had to almost be like pre-language, but it is a very vivid picture.*

Carol moved to Colorado in her summer of fifth grade and discovered near her house a park with a lake. She discovered a raft among the cattails and she recalled, "we spent our first summer in that old irrigation lake. We called in Frenchie's Lake ... we caught turtles and fish and snakes and crawdads". Carol described herself as a bit of a tomboy, but one who pursued her interest in natural history by borrowing books from the library .

Just like Robert's mom reinforced his interest in nature by allowing him to play with his brothers along the potentially dangerous canal, so too Carol described the influence of her mother who took three kids camping on the weekends by herself. From these trips, Carol developed a love of rivers that extends to her work today.

> *My older bother and I were always trying to get to the source of the river and I think that was something that I made up for us to do. So we would always travel upstream on the river until it was about dark ... but there were all these beaver dams, we ran into bear and porcupine, we would get diverted all over the place, pick raspberries or stop and actually fish, or a deer would bound out and we would have to go follow it for awhile. We would just ramble all day like that and mom didn't worry about us.*

Both Robert with his butterflies and Carol with her snakes had to overcome some stereotyping during their high school years. Being contemporaries, Carol remarked, "It wasn't a real cool thing to do in the late fifties". Carol's nature ramblings and self-taught interest in wildlife set her apart yet helped her to excel.

> *I enjoyed biology class - that filled in a lot of knowledge gaps, especially at the cellular level, but I was probably more knowledgeable when we went out into the real outdoors than my teacher. I remember giving a speech on the difference between salamanders and lizards and bringing my pet salamander. I just wowed the class. If I tried to speak on anything I didn't know much about, I was a miserable failure, but if I stuck to subjects like*

> *salamanders, snakes, natural history, I would excel. So it was worth it to be strange.*

Both Carol and Robert understood the importance of undisturbed places of nature that one connects with in their youth. Carol said when she was a teenager her favourite lake had been developed into State Park with blue grass lawns. She felt, "it has been tamed down quite a bit and it has lost all appeal to me. It has been ruined". Robert observed that in Aurora, "Growth of that city and demolishing of habitats that I knew as a boy had a great deal to do with my deciding to enter the environmental field, as I watched the habitats I cared about actively destroyed".

The autobiographies of this mentoring set reveal certain commonalities which drew them to their love of natural places and their career-long involvement with environmental education. Another link is that at university they were allowed to pursue their own interests. While Robert chose a more scientific course, Carol majored in education, but had "a nice liberal dose of outdoor and natural history subjects" for her biology minor and she noted, "When I did get my education degree, I think the subject I liked most was my science methods class which went into that whole concept of facilitating the process approach".

The prime mentor's early career

When her first team teaching job required that she take over science she commented:

> *They thought they were giving me the worst, low person on the totem pole position. I thought that I had died and gone to heaven. Brere Rabbit in his rabbit patch, don't let on you really want to do this. Ah ha, I not only get to teach, I get to go outdoors with the kids, I get to do all this process stuff that I have always liked to do and I get paid to do this. I ended up being the one who did outdoor education and resident outdoor ed programs.*

Her comments are reminiscent of other participants - Gary who incorporated process into mini-units for kids at forestry camp; Wendy and Glen who used outdoor hands-on kid activities; and Sally, Ann and Ed who took their high school biology students into the field.

After about ten years, Carol became restless and took a summer job as a naturalist as Roxbourough State Park. Of this transition, she said,

> *So I got to try out with adults what I already knew I could do with kids. I did teacher training to get them interested in teaching science in more of a process approach rather than rote or from the book - the same struggle still going on in science ed today. I got to study up on interpretive naturalists and what interpretation was. It was already pretty much the style that I did.*

Like Wendy, Carol voluntarily took extra classes and this is how she finally met Robert who made his living as a naturalist. Yet she knew like, John (Record 1A,) Barb (Record 1C) and Gary (Record 3B), "that one couldn't quite make a living as a seasonal naturalist" so she decided to stay in teaching and hone her skills and "eventually something would come along and I'd just have to know it or create it".

Transition out of the classroom

The experience that help catapult Carol out of the classroom came from her volunteer work with the Denver Audubon Society. She put together a grant proposal to the Colorado Division of Wildlife for monies from their non-game hunting fund. Carol's plan was called Urban Wildlife Education and its purpose was to get urban kids out exploring and appreciating the outdoors in a semi-rural setting. It involved pre and post activities that students would do at their own schools, but she emphasised, "they could learn that you could be outside anywhere and be learning about the environment around you". This plan had more than a professional environmental education side to it as Carol disclosed:

> *Aha, this is that thing that is going to hit me over the head. ... I want to be the person that they hire to implement this plan that I created. I have this investment now and I have to go and see if I can make it happen.*

Before making a personal decision regarding this issue, Carol stressed that she touched base with Robert.

> *My mentor was always there in the background encouraging me to pursue these things. He always supported me doing things like that, like taking the job at Barr Lake and giving up a tenured position. He was always very much there, not often in person, but through letters of encouragement and infrequent visits.*

Knowing that Robert saw her potential and had faith in her, she now 'had the self-confidence to move forward, change careers and take on uncertain, yet rewarding and significant new directions". She explained the reasons for her career transition.

> *It was kind of feeling now or never. So how can you pass up this opportunity to see what you can do, you can always go back and teach, but you don't know if you can always go and do this. You created it and so you better darn well see it through ... So I accepted a six month temporary position with the Division of Wildlife and quit my full-time, tenured teaching job .*

When this job which Carol had created and successfully filled was to become a permanent position, she failed to get it because she lacked the administrative knowledge required by the Colorado state government system. Carol commented on this turn of events:

> *There wasn't one thing on the test about how to lead kids in the field or how to organise a volunteer program, how to write and develop a curriculum, how to meet the needs of teachers. So I was out of a job, I was laid off, I collected unemployment. I knew one thing, I didn't want to go back to the classroom just yet, if ever.*

Through the recommendation of her 'supra mentor', Robert, Carol taught herpetology at Conservation Summits for National Wildlife. Exhibiting the sense of self-motivation seen in many of the mentorees, Carol spent the next four years as a part-time graduate student and private consultant for various environmental programs, she trained park naturalists, taught adult courses, ran a nature centre and taught science and maths methods at the university. She described this interlude in her career, "I was having a wonderful time.

I had absolutely no monetary credit and lived in a tiny little house in Louviers, Colorado. I had salaries that went from zero to four thousand bucks a month".

Robert remembered that when his mentoree, Carol finally left teaching and began to free-lance as a naturalist, her sense of self-confidence increased and he commented:

> *I have to say that I give her an awful lot of credit for having built her own confidence that she would be able to make a difference in other people's lives and through them the environment. And I think she has done that.*

The ability to recognise untapped potential in a mentoree is a characteristic observed in many of the mentors in this study and Carol agreed that her 'supra mentor' probably saw that she had a lot more potential than she was probably using.

Finding the *Project WILD* network

As Carol became more widely known within the environmental networks, she heard about a new curriculum program called *Project WILD*. After attending a facilitator's workshop she receive noticed that the Colorado Division of Wildlife was looking for a full-time director for the program. She again touched base with her mentor:

> *This job description looked like everything that I was already doing, but had one umbrella position, so I applied along with two hundred and thirty-one other people. Again lot of encouragement came from Robert to do that.*

Carol got the job and began to create a vision for this new program using new leadership skills as she built up her vision of environmental education.

> *From my background as a teacher it was a lot easier to listen and know what they needed and wanted ... There was already an established team of people out their in five different regions and the Dept. of Ed. who were there for me to work with and to provide some*

> *cohesiveness and leadership. They were willing to accept me as their leader. (laughing) I just think that all of them were much more seasoned at all of this.*

Carol may have been the 'new kid on the block', but she quickly grasped the hierarchical organisation of the Division and learned to work creatively and successfully within the system. She built up a volunteer cadre of teachers throughout the state to become *Project WILD* facilitators and got field personnel like Bob and John (Record 1A) committed to the educational side of their environmental management and law enforcement work. By 1993 over 14, 000 people had taken one or more *Project WILD* workshops. Carol was also inspired by Bill Stapp and his work on the Rouge River Project. She found out about aquatic federal aid monies and used a creative way to interpret the government guidelines by looking at time spent by volunteer facilitators and volunteer participants. Carol made some changes to Bill's methodology for the new program called Aquatic Riverwatch. She used a triad training team model for the students and teachers. The Division's aquatic biologist, Barb, insisted the teams were taught to run the water quality tests to Environmental Protection Agency standards so that the results would hold up in state water court proceedings. The success of this endeavour was detailed in the mentoring story of Barb and Ed (Record 1C).

Co-lateral relationship between the prime and supra mentors

The mentoring relationship between Carol and Robert became more equal and they now see each other as co-lateral peers. Both are known in their own areas, but for different accomplishments. Carol has served on the National Steering Committee for *Project WILD*, worked internationally in Canada and Scandinavia and has recently moved into private consulting; Robert continues writing and lecturing. Carol expressed her view regarding the quality of the current relationship.

> *Robert looks up to what I do and thinks it is incredible what I have created and done. Of course, it is like a mutual admiration society. It has been exciting to see the path that he has taken and the writing that he does, and his writing just gets better and better. We still like*

> *to go out birding or chasing butterflies, the infrequent times I see him. The letters talk about what we are seeing and writing about the natural events around you. It is fun to know that when I write about them, he can appreciate them and visa versa.*

When asked about her current professional development, Carol commented, "I would never want to be content, because then I would become complacent. So I am pleased with the directions my career is going, I want to maintain the quality and have it all function at optimal levels, and be very sustainable, yet in the same period of time, do things for myself".

Carol understood the benefits of the mentoring which she received from Robert. Now, in her leadership role as *Project WILD* state coordinator, she was in a position to take on this role herself. She worked with many highly motivated teachers, some of whom went on to become facilitators and undergo further professional development through annual leadership training conferences. It is in this kind of setting that the mentoring cascade could move from being *perceived* to *acknowledged* to *deliberate*. Carol accepted the fact that if she did find someone to mentor, that person would be "entwined in your life for a long time. It was worth it for me, so I hope it would be for others".

Becoming the prime mentor for Pattyanne

As a statewide environmental education leaders, Carol realised "the ultimate cost effective way to reach future citizens was through teachers". Having been in the classroom herself, she came to a further understanding of the dilemma of an environmental education teacher.

> *I realised how lonely a teacher's position is in a classroom, how isolated they are. Really good teachers, the 'alpha teachers' (as defined in a wolf pack) are out there on a limb most of the time. They are not in the pack, they are ahead of it. They are sometimes thought of suspiciously by other teachers who would like to just keep the status quo. They are early adaptors of new ideas and new projects are always willing to try them out and pilot new things. They are the first ones to jump*

> *on the* Project WILD *bandwagon and they become pretty much the core of the volunteer facilitators who offer the workshops and are often very strong leaders in their own schools and communities, if they will ever notice that about themselves.*

Carol noticed that this sort of teacher "doesn't necessarily have a large ego, they have a bigger vision". She felt part of her job as state coordinator was finding ways to support these people because she believed "these are the ones who make the difference with the kids who ultimately make the difference out there in the world". She described a method to get support for these 'alpha teachers' as she called them.

> *This year I called it Project WILD/ Education Leadership Conference and wrote to all their principals requesting that they get professional days to attend because they are recognised leaders throughout the state of Colorado. These are the leaders in their communities who are delivering sound, quality education, it happens to be environmental education, but it is a model of education for any subject. But why not recognise them and sing their praises.*

The background of Pattyanne, the alpha mentoree

Pattyanne was one of these 'alpha teachers' whose personal interest in environmental education began in 1980 by reading Joseph Cornell's book, *Sharing Nature With Children.* She described her students as "an extremely diverse group of kids, mostly Hispanic and from very low income families. The reading level was around third grade and this was an eighth grade book and no success. I learned from that first year that there had to be something else I could do to get these kids excited". She took her first *Project Learning Tree* workshop and quickly incorporated the ideas for her classroom. She was later asked to be on the state advisory team for the project and exclaimed:

> *That is how I really got hooked big time. I went to a couple of meetings and thought what am I doing here with this incredible network of foresters who I didn't*

> *even know existed. I didn't even know there was a difference between the US Forest and the State Forestry.*

Project Learning Tree shared their network of facilitators with the new *Project WILD* program just beginning in Colorado and she met a whole group of teachers around the state who shared her environmental education interest.

Initiation of the relationship with the prime mentor, Carol

It was at the annual leadership training conference in 1988 that Carol met Pattyanne and noticed her openness and willingness to learn more about environmental education.

> *She was just this dynamo, very personable, but she needed encouragement on a self-confidence level and seemed to thrive on the encouragement she received. A very creative person who had a lot to give. She sought from me friendship, encouragement, recognition, somebody that saw what she had to offer and accepted that and wanted it to happen. There was a neediness, I don't know if that is the right term. The potential was there. All she needed was someone to recognise it and tell her, 'You are incredible at this, you are a natural'. And to encourage her to pursue that, not tell her how.*

Pattyanne described her own impression of this first meeting.

> *I had heard so much about this Carol ... I had envisioned this person and I had these expectations of her. I gave her a present because I wanted to thank her for all the neat Project WILD stuff and wanted to find out who she was and that she was the one responsible for giving me all this information. I think we just sort of connected that very first time.*

This passage brings out several important concepts relating to this study. First of all it is seen that there needs to be an initial attraction between the two people. For Robert and Carol it was not only the knowledge of butterflies, but the mutual caring about them. Carol saw in Pattyanne someone who was a natural at creating excitement in environmental education. Carol had learned from her 'supra mentor' the effectiveness of being encouraged without being directive. She was open to the possibility of friendship with this person as she got to know her better. Carol remembered, "she kind of became a *WILD* groupie taking a lot of advanced workshops that I taught and she would hang around at night with a bunch of us".

Development of personal and professional support for the alpha mentoree

Carol encouraged teachers, like Pattyanne, to accept the responsibility of leadership roles as they fostered the goals of *Project WILD* - to go from awareness and knowledge and skills to effect responsible action on behalf of the environment. She encouraged their involvement as "an outlet for all of their creative talents as 'alpha teachers'. Carol received a small grant from an oil company to allow teachers to apply for mini 'Habitat Grants' and noted, "It was a catalyst for creating community support for wildlife". This environmental philosophy from Carol in Colorado echoes that of Glen and Wendy (Record 1B) in Queensland.

> *The students' self-esteem goes up and their grades go up and it is all because they can do something that is hands-on, meaningful, real and concrete. It is still that same old Piagetan stuff - you have to start at a concrete level and go from there. The simple act of planting that tree or hauling dirt in or planting a flower or watching a bird come build a nest just makes that connection back to nature and back to the fact you are part of the environment and you can affect it positively.*

Pattyanne applied for one of those mini-grants and Carol reported its effect.

> *Pattyanne's school is a heavy minority school, low attendance rate, poor grades, overcrowded, a lot of discipline problems, but when Pattyanne got her habitat grant and started working on it, she noticed changes in the attendance rate of her kids.*

Carol not only offered professional support during this time, but personal as well. Pattyanne described her as genuine and sincere giving her emotional support. She remembered, "A lot of eleven o'clock phone calls. I used to bounce a lot of my ideas off of her ... I used to always feel her out first before I would do something". Unlike Wendy and Glen (Record 1B) and Sally (Record 2B) who had very supportive principals or Ed (Record 1C) whose principal was happy to get a school computer as an exchange for his teacher's time, Pattyanne's administration was almost obstructionist as seen through her remarks:

> *I was constantly getting called in for having kids outside ... why do you take all the fieldtrips? We went in the fall and now we want to go in winter to see all the different habitats around the pond. I thought I was the only one feeling that. I never had any support from my colleagues that I taught with and administrators, I was always justifying what I was doing. I felt that what I was doing was working, the kids were responding, the kids were excited and enthusiastic. I couldn't get those feelings out of the science book.*

Carol observed her mentoree's situation at school and commented, "She had a real frustrating time and I was always ready and willing to listen to that. People just need somebody they can vent it all on, so we would have these late night talks". One of the special connections between this mentoring pair is the fact that, unlike many of the natural resource personnel who were in the environmental networks, Carol had completed her 'tour of duty' as classroom teacher. Pattyanne expressed how that personal bond kept her going.

> *I could call up and ask questions because I was feeling real alone and isolated in my building. I was the only one doing this stuff. Even though you know in your heart what you are doing is right, but you wonder why is no one else is doing this. Am I the only one who can see what is going on? Maybe I am wrong. You constantly question yourself. So I'd get on the phone and call Carol.*

Carol described her mentoree's personality saying, "her sense of humour, her ability to inspire others, she is really charismatic in front of a group, they listen, the way she works with kids". Pattyanne began to visit Carol at the Division of Wildlife and declared, "before you know it I was the 'facilitator from hell' and started doing workshop after workshop. Then we started calling and she took an interest and got involved in what I was doing". But beyond this professional caring Carol expressed a personal concern for Pattyanne commenting, "We were always trying to slow her down to stop and smell the roses along the way".

Pattyanne persisted with her environmental education volunteering as a facilitator for both *Project WILD* and *Project Learning Tree* and working with her students at school. In 1990 her students were able to put in $50,000 worth of landscaping around their school. She explained the consequences.

> *I started getting some notoriety because of that. The press took an interest. I don't know if it was because it was such a neat environmental thing to do or because these were minority kids doing it. It also proved to me that I could show other people that you don't have to have a mountain in your backyard or a farm to teach kids about the environment. You can actually do it on a city block. One of my big driving forces was to teach other teachers that you could do environmental education anywhere.*

Carol professionally supported her 'alpha mentoree' by nominating her for the a governor's award for the Environmental Protection Agency. In 1991 Pattyanne was selected as the Colorado Conservation Teacher of the Year and went on to win the national title although she was docked pay by her school district to go to the nation's capital to receive that award.

Prime mentor support during a career transition

Pattyanne is now temporarily working for the United States Forestry Department on a fellowship and is the environmental educator for a five state region. Carol described the government position that Patyanne has taken:

> *She got this non-position, position and it turned out to be a really neat one at the Forest Service through a twist of fate here and there. And she has just taken off with it.*

> *It is neat to see Pattyanne doing her own things and having the far reaching influence that she is having in her new position.*

Pattyanne has enhanced her leadership skills as seen by her current job responsibilities, "Half of my time is committed to the Washington, D.C. office. I developed activities and curriculum for the rainforest in Puerto Rico and a project with the Guam teachers and foresters". She explained her philosophy of environmental education which she tries to impart in her work:

> *Sure you have to have some sort of, I like to use the word 'ethic', and some values, but I don't think you have to be real severe. The main thing that you need to know is that you have to show both sides, if you want kids to understand about the balance and how things work and how the systems are put together, and that sometimes there is not always a right or a wrong answer. The reason things are like they are now is that people don't see each others' side and don't communicate.*

A comparison of the stance of the 'alpha mentoree' with that of the 'prime mentor' shows a philosophical congruence which provides a firm foundation for their mentoring relationship. Carol stated her opinion on dealing with controversial environmental issues, "Maybe it is a skills development that they need, so that they don't have unilateral stands and rigidity. But you can't be sustained if you don't have a strong belief system. Probably philosophy could also be synonymous with vision and ethic, the land ethic that Aldo Leopold talks about". This is a similar sentiment echoed from the 'supra mentor' Robert who in his book *The Thunder Tree* (1993: 218) references Aldo Leopold's *Sand County Almanac* (1946) saying , "it is the eloquent starting place for the revolutionary concept of a universal land ethic". These are the same principles which inspired Paul to perceive Aldo as his mentor.

Distinguishing the mentoring relationship

In her present work situation, Pattyanne described another special relationship with her supervisor, "It is not really so much as mentor/mentee as coach and player and we are kind of on a team. In my new leadership role, he has given me a lot of opportunities". She is able to distinguish this type of support from the personal and professional mentoring relationship she continues with Carol.

> *Ed is a coach, but he is still my boss, whereas a mentor doesn't grade you and give you salary increments and can't get you fired. With Carol the relationship is still on-going. I call her all the time ... Carol has given me, not so much leadership skills, but the self-confidence to know that I can do it. I could have never gone into this job without the previous help from all the other folks. With all the new programs starting and all this enthusiasm for the first time in twenty years, I feel sort of responsible, that is why they have kept me a second year ... to finish what I have started.*

Pattyanne said that there are days when she feels excited and self-assured and but other days when she questions her decision and all the new risks she is taking. But she knew that she has the sustained support of her mentor, commenting, "I think just knowing her phone number since she travels so much, and knowing there is someone there who has gone from the classroom to a bureaucracy to doing all kind of incredible things". Pattyanne spelled out what she considered the most important feature of her mentoring relationship.

> *The most important thing, if I had to pick one single thing that Carol did is help my self-confidence. Some people say, I want to know my limits. I never want to know what my limit are because I always want to think they are always going to be higher. Sometimes that gets you in trouble, but let yourself expand on those, take what you already know and use it.*

If one learns about mentoring by being mentored, than we can trace Robert's effects on Carol's self-confidence and now Carol's to Pattyanne. The two women share their views on not wanting limits to their personal and professional growth. Pattyanne detailed her present environmental education leadership role:

> *I don't make any more money than a classroom teacher does, I work twice as hard. I do have more freedom and more flexibility and I also have this chance to do things that I really never thought I could. I mean talking to boardroom full of billionaires about why do they want to give me money for my program ... I was thinking how many teacher workshops and all the things I did. I normally teach a hundred and twenty kids. Well ,over this year I have influenced over ten thousand. It is another level.*

When asked about the current status of the relationship, Carol described it as "more of an equal now, Pattyanne has actually given me a few of those late night talks in recent times". The 'alpha mentoree' remarked, "You know you have come full circle when she asks for my opinion" and went on to explained her reason for this growth in the mentoring relationship:

> *It is just after being close and being friends for so long that I'm sort of her equal. I still think of Carol as so far up there ... as those persons that you aspire to be like or admire ... I am kind of catching up a little bit ... because we are both in agencies we can relate on a different level than we did as teacher/agency persons. More of a colleague now, because we both have all this bureaucracy and red tape that I never had to deal with before. Again, she has stepped right in and has been real supportive and understanding about the frustrations that I have felt with an agency. So now it is on a different level. That has made the relationship stronger.*

The importance of mentoring for environmental educators

What makes the continuance of this kind of mentoring important? Robert, the 'hyper mentor' explained why he thought mentoring was important to an environmental educator.

> *I guess I would simply say that mentoring is important. Any naturalist can develop to a certain extent in a vacuum by him/her self. But it really takes another mind*

> *to bounce off questions, responses, reactions, aesthetic responses to the world, rigorous set of testing of our assumptions. It is all too easy to make assumptions about the world if we don't have someone else's knowledge to compare them against. So I really think, whatever that chemistry is, two people are able to accomplish the goal of knowing nature and communicating about nature probably better than one person can alone. I think that is kind of the heart of mentoring as I see it.*

Carol, the prime mentor, explained her views about helping the 'lone wolf' teachers who persist on teaching environmental education with or with out administrative support. Pattyanne, the alpha mentoree, gave her opinion of why mentoring is important in this field stating that not everybody teaches environmental education and even those that do are not at the same level or same speed. It can vary from "someone like me who uses it everyday and incorporates it into every type of lesson ... I always had that little conservation ethic in everything I taught, whereas other teachers may go outside one day a month and do an activity and that is considered environmental ed for them". She stressed that there is no mandate from the Sate Department of Education to teach it and therefore, people teach it because they are personally committed. She acknowledged the effectiveness of her own mentoring experience claiming:

> *... without people like Carol to fall back on I would have gone back to the science book and been like others and probably would not have been very happy. I wouldn't have gotten as far as I did without the outside support ... I really thought about it, there were so many folks who helped, but when I think back, who has always been there from the very first - Carol.*

Pattyanne, like many people in this study, paused to consider several important mentors in her life before settling on the one she regarded as the most influential mentor for environmental education. Dr. Gordon (Record 2A) vacillated between another life-long mentor and Professor U who set his sights on the biological science. Sally (Record 2B) had two professors she felt were very important in her professional development, but chose Ivo as her mentor because of the personal part of relationship they also enjoyed. Going back another level, Ivo spoke of selecting Orin from a range of other people who had shorter terms of influence. In this record, Robert had to choose between the professor he met as a boy and with whom he later did his PhD work and Grant who became in his words "a true mentor' ... and certainly the best mentor one could have had in the field of environmental education". This hesitation by participants in nominating the most important mentor is not viewed as an uncertainty. Instead, it is seen by the researcher as a culling process, one which distinguishes short term influence, network associations, role modelling and coaching from effective mentoring; one which ties the experience of relationship to the importance of environmental education.

The cascade of mentoring

If mentoring is found to be effective for these leaders, the question of passing it on becomes vital. Carol and Robert indicated that they have other mentorees whose stories were not able to be followed within the limitations of this research. Some alpha mentorees were not yet ready for this challenge like Ann and Sally, yet others indicated an interest to do so. In following through this chain of interviews, Pattyanne was one who felt ready to become a mentor. She repeated some advice given to her by the *Project Learning Tree* state coordinator, "Mike says whenever I do a workshop, 'There might be another one of you in there'. I need to find another Pattyanne out there because I can't keep doing these workshops myself". More than sharing the workload, Pattyanne feels that a mentoring relationship with a new 'beta mentoree' would be a compliment and give her "satisfaction and feeling like I am paying back". She spoke of a budding relationship with some women who are doing school programs for the first time and said:,

> *There are a couple people in the Forest Service who have already latched on. They will call me up for stuff. It is kind of starting, nothing real serious yet, but they are seeking me out, and they just keep wanting more and I keep giving them more. It is a nice feeling. It is personal, too, it makes me feel like what I am doing is important. It reconfirms that feeling that what I am doing is really making a difference.*

Pattyanne's comments summarise some of the major themes of this study: the initial attraction between mentors and mentorees; the philosophical congruence regarding environmental education; the support given to the mentoree; the reciprocal benefits received by the mentor. Pattyanne referred back to her own mentoring which was acknowledged, but not particularly deliberate on Carol's part and explained:

> *I wasn't looking for it, it just happened. Once I realised what was happening, I held on real tight and didn't lose those folks. I went out of my way to hang on. I wouldn't have given Carol the little bird necklace, if I didn't want to meet her, but I wasn't thinking I will get a mentorship out of this. I just wanted to give her something back for giving me all this neat stuff. She opened* Project WILD *to me and that was just a godsend.*

Although the initiation of many of the relationships in this study were serendipitous, some 'alpha mentorees' realised the potential of mentoring and were assertive in their actions. When this happened to Pattyanne as a mentoree, she deliberately set out to foster the relationship with Carol. Now, as a possible mentor herself, she proposed, "maybe we have to actively go out and seek people that are fledging along and find someone who has a spark". And yet like Gary (Record 3B), Pattyanne had been involved in a more formal mentoring scheme for new teachers through her school. Her evaluation of the program was, "It didn't work. People didn't connect because it was mandatory".

From the testimony so far, environmental educators felt that a personal and professional affinity is necessary before a mentoring relationship can develop. If this happens, there is the possibility that a 'cascade of influence' can move forward in a deliberate fashion.

5.3.4 Commonalities within Records 3A, 3B and 3C

Case Three has included three records which show that mentorees who are progressing in their environmental education careers, have positive mentoring experiences particularly when there is both a personal and a professional dimension to that relationship. Professional support, such as network contacts and being given new opportunities, is important to the novice mentoree because they are in a position to learn from the mentor. As the mentoree progresses to the status of a colleague or co-lateral peer, the mentor offers encouragement, and acts as a sounding board when the mentoree makes career transitions or widens his/her leadership roles. Often the mentoring pair begin to see each other as equals and, at times, the mentoree can reciprocate by giving the mentor new professional information. When the mentoring process moves from being perceived to acknowledged to deliberate, the professional alliance can be enhanced and may develop more expediently, especially when the personal relationship is also advancing. In turn, this helps career progress. The mentoree begins as a novice which is more dependent on needing new information rather than age or status. The mentoree can then advance to being a colleague if they work in the same area or a co-lateral peer if they work in separate areas of environmental education. Many relationships move towards equality as the mentoree takes on more active leadership roles. This process and the researcher's third proposition is illustrated in *Figure 5.7*

Professional alliance and environmental education

People who eventually become leaders in environmental education are introduced to the field in many ways, but the influence of the mentor can foster that interest. Liz and Cem were excited by new ecology courses, but Cem followed through immediately and it led to his mentoring by Paul. Liz, trained as an historian, put the idea aside until her first job when Ken, her mentor, renewed an environmental interest. Later it became an integral part of her work for teaching water conservation to children. Paul, Carol and Robert felt a natural affinity for wild places and environmental education fitted in easily with their professions.

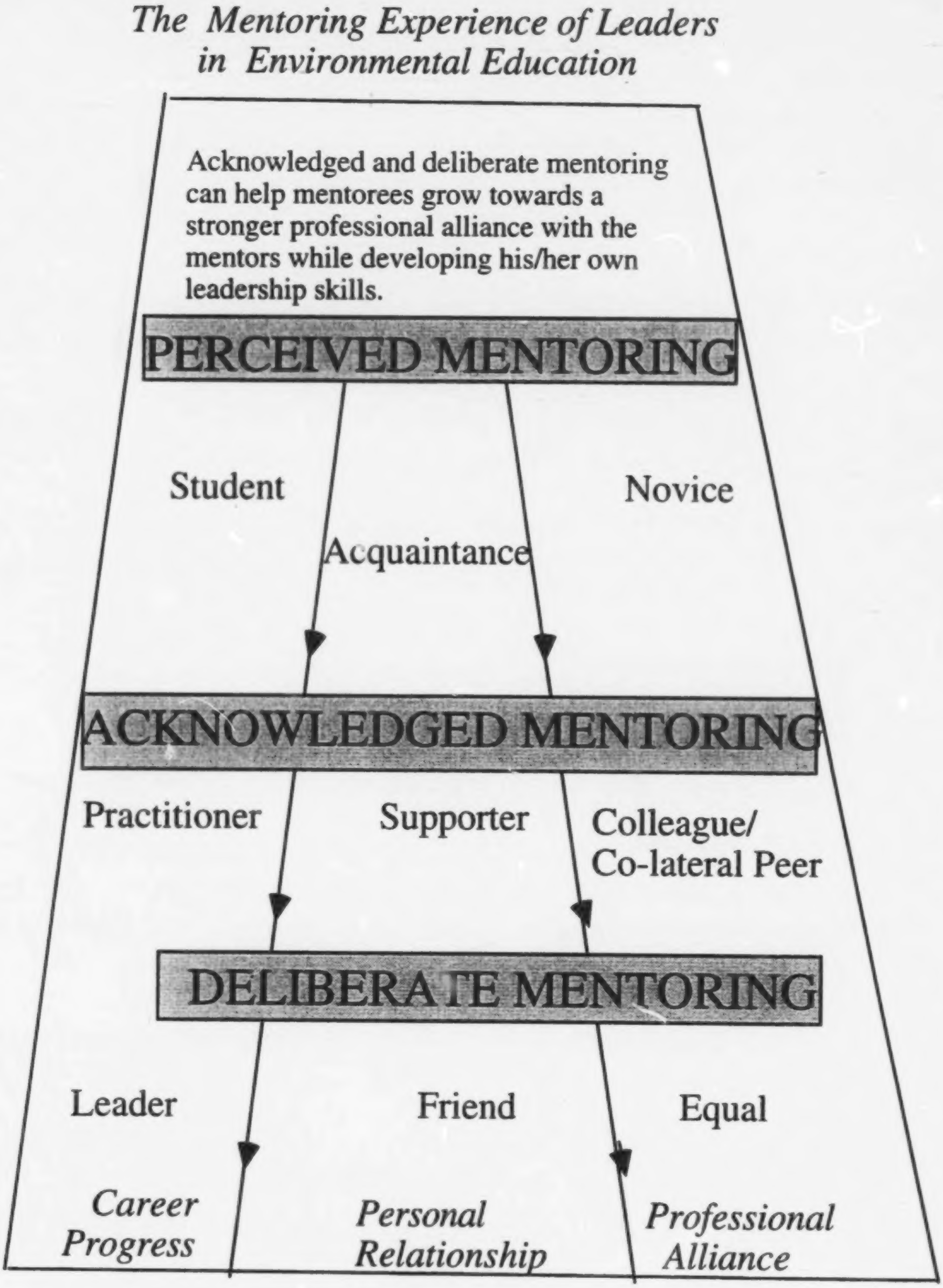
The Mentoring Experience of Leaders in Environmental Education
Acknowledged and deliberate mentoring can help mentorees grow towards a stronger professional alliance with the mentors while developing his/her own leadership skills.
PERCEIVED MENTORING
Student
Acquaintance
Novice
ACKNOWLEDGED MENTORING
Practitioner
Supporter
Colleague/ Co-lateral Peer
DELIBERATE MENTORING
Leader
Friend
Equal
Career Progress
Personal Relationship
Professional Alliance

Figure 5.7 Personal and professional dimensions of a mentoring relationship which can enhance a developing career.

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The importance of networking cannot be overlooked as another invitation to environmental education. Gary and Ken were part of the network for Forest Service workshops and *Keep America Beautiful.* Ann, Liz, Carol and Pattyanne were all involved with *Project Learning Tree* and *Project WILD.* What all of these people in Case Three had in common was their tenaciousness in following through an interest which they felt was important and, in doing so, many of them met a mentor who aided not only their personal development but their own professional growth as well.

Professional alliance in hand with personal development

As the mentorees progressed in their professional alliance, the mentors became closer personally moving from casual acquaintance to supporter to friend. In the examples of mixed-gender mentoring, it would be naive to think that there would not be an aspect of sexuality. Two participants in this case explain how they felt about the issue. Both Liz and Ann bring out the non-sexual aspect to their mentoring relationship. Liz reported, "I was dating and Ken was married and there was never any sense that it was more than two really good friends. He is the finest friend I can imagine". Ann reported that she went on professional trips with Cem and "never felt threatened". She emphasised that Cem's integrity also applied not only to his personal behaviour but also to his professional role as an interpreter. Other participants, like Gary, also spoke of professional integrity and described his admiration for Ernie when he dealt with political pressures. In the preface to his latest book, Gary dedicated it to Ernie as his acknowledged mentor. It is seen then that a professional alliance allows the mentoree to move toward equality with the mentor until it becomes reciprocal.

5.3.5. Comparisons across Case Three

Case Three not only has commonalities, but it also has contrasts which are presented in *Table 5.3.* The matrix highlights themes such as views toward mentoring, discrepancies, movement in professional alliance, and support offered to the mentoree. For example, the people in chain 3A - Aldo, Paul, Cem and Ann - strongly agree that mentorees should develop their own environmental ethic by thinking through the issues, so

Table 5.3 Major themes highlighted from Records 3A, 3B and 3C.

CASE THREE-CHAINS	THEME	THEME	THEME	THEME
Record 3A	View toward mentoring	Characteristics of mentor	Watershed Moments	Transmission of mentoring
Aldo	universal awareness	environmental philosophy	land ethic	perceived
Paul	mentoring generations - leave disciples, not clones	authentic care	Aldo's cabin	acknowledged and deliberate
Cem	join the clan	integrity	mentor's class in e.e.	acknowledged and deliberate
Ann	autonomous mentoree	mental not physical attraction	jump off and fly	a future possibility
Record 3B	THEME Professional status at the beginning	THEME Discrepancies	THEME Changing views toward e.e.	THEME movement in professional alliance
Ernie	leader, acquaintance		from preservation to conservation	advising a novice
Gary	practitioner, acquaintance new approach to e.e.	contemporary in age to Ken	from social to environmental communication	becoming a co-lateral peer Forestry Dept/ Water Board
Ken	practitioner, supporter, colleague	same workplace as Liz	from science to tree hugging	colleague with a mentoree
Liz		rupture and repair	tasting grass stems and e.e. philosophy	reciprocated mentoring

Record 3C	THEME Opening up of mentoring	THEME Career Transition	THEME Support offered to the mentoree	THEME Awareness: childhood sense of place
Grant	male to male	new academic department	new degree for e.e.	
Robert	male to female	free-lance naturalist	support for career change	Highline canal
Carol	female to female	teacher to consultant	new network	Frenchie's lake
Pattyanne		teacher to natural resource dept	creation of new e.e. material	

they become autonomous proponents for environmental education. Chain 3C- Grant, Robert, Carol, Pattyanne - shows people who have made several drastic career changes and needed different levels of support from their mentors. Ken and Liz (Record 3B) are anomalous in their mentoring relationship because they have stayed in the same workplace.

Teaching environmental education

Other comparisons show that there is some disparity among these participants regarding how to teach environmental education. Paul, warned about teaching environmental education through 'tree hugging' alone and argued for scientifically based information. Paul and Gary agreed that environmental education is a process needing both cognitive and affective approaches to encourage interest in solving environmental problems. When Gary had Ken, another scientist, smelling the scent of a Ponderosa pine at a Forest Service workshop it was a turning point for his approach to teaching environmental education. Ken, in turn, engaged Liz's interest with a similar affective experience when they sat on the hill examining a grass stalk and discussed how to get scientists at their workplace to explain environmental impacts to visiting students. This became a watershed memory for Liz and coloured the way she taught water conservation to school children for the next ten years.

Rupture and repair

Record 3B has a significant point of contrast - the 'rupture' in the mentoring relationship when Liz was promoted above her mentor, Ken.

In the end, they were able to mend this rift because of the deep friendship which had matured as part of the personal relationship, and professionally, because they both recognised their different strengths as complimentary rather than competitive. The mentoring is sustained today.

Extending the mentoring of females

An important development that Record 3C brings to light is that mentoring is beginning to extend to more women in environmental education - from Carol to Pattyanne to new women volunteers. To test this evolving theory further, Case 4 will provide two records of webs of relationships where the mentoring extends out to new female 'beta mentorees'.

5.3.6 Similarities and Differences across Cases One, Two and Three

Career progress and the effects of mentoring

The three Cases presented so far show that mentorees can be at various starting places when they meet their mentors - student, practitioner or burgeoning leader. To understand the effectiveness of the mentoring experience, *Table 5.4* shows the relative movement of the mentoree toward fuller leadership roles during their mentoring relationship. This continuum is based on the recognition of the leaders' self-reported activities seen in *Table 3.4* and the triangulation of those roles during the interviews with the mentor.

Of the participants thus far, John and Bob (Record 1A), Ann and Cem (Record 3A), Ken and Liz, and Gary and Ernie (Record 3B) actually worked in a hierarchical work relationship. However, there were no formal mentoring programs for the Colorado Division of Wildlife, the Forestry Department, the Nature Centre, nor the Board of Water. Yet, these people met someone within their workplace setting who had a magnetism not only in his personality, but also in their approach to environmental education which led to an eventual mentoring relationship. This work-related introduction contrasts with the informal meeting of Carol and Robert in the setting of an Audubon Nature Camp, Pattyanne and Carol who met through the *Project WILD* network and Sally and Ivo who met during a summer class.

Table 5.4 Changes in career progress before and during mentoring.

				CAREER PROGRESS						
	Student		**--->**	**Practitioner**				**--->**	**Leader**	
Before mentoring (*mentor in italics*)										
1A			John (Bob)							
1B					Wendy (Glen)					
1C						Ed (Barb)				
2A		Richard (*Dr. Gordon*)								
		Dr. Gordon (*Prof U*)								
2B			Sally (Ivo)							
	Ivo (*Orin*)									
3A				Ann (Cem)						
		Cem (*Paul*)								
		Paul (*Aldo*)								
3B				Liz (Ken)						
						Ken (Gary)				
						Gary (*Ernie*)				
3C					Pattyanne (Carol)					
					Carol (Robert)					
		Robert (*Grant*)								
	Student		**-->**	**Practitioner**				**-->**	**Leader**	
During mentoring										
1A										John
1B							Wendy			
1C								Ed		
2A										Dr. Gordon
									Richard	
2B										Ivo
								Sally		
3A										Paul
									Cem	
							Ann			
3B									Gary	
								Ken		
								Liz		
3C									Robert	
									Carol	
								Pattyanne		

Having once met, only Cem continued holding on to a level of formality with Paul until he felt his equal. This same discrepancy was also described by Richard and Dr. Gordon (Record 2A).

Both Ivo (Record 2B) and Liz (Record 3B) described their mentors as 'renaissance' people. Orin appreciated Ivo's musical and scientific talents, while Liz said she was initially drawn to Ken for his gentle artistic side as well as his passion for environmental education.

Sharing networks is an important process in a developing mentoring relationship. Glen (Record 1C) introduced Wendy to people who helped her finance larger environmental projects for her school and community. Ivo (Record 3A) introduced Sally to the wider audience of university teaching and the professional biology organisation. Cem (Record 3A) found that job opportunities were opened on the strength of his mentor's name alone. Ann (Record 3A) increased her professional contacts when introductions were made to Cem's interpreters network. Carol (Record 3C) nominated Pattyanne for a forestry position which she holds today.

Professional alliance - beginning as novices

All of the mentorees began as novices, that is, they were in a position to learn from the mentor no matter what stage of career progress they were in. After mentoring, many of them had moved to a 'colleagial' position, defined as being on a similar professional level. This is shown in *Table 5.5.* Only Liz and Ken (Record3B) are actually in the same workplace, while John and Bob (Record 1A) work for the same natural resource department, Wendy and Glen (Record 1B) are in the same department of education, and Robert and Grant (Record 3C) are at the same university.

Developing Professionals

Many of the other mentoring pairs became 'co-lateral peers', defined as having a similar professional level, but in a different work area. For example, Ed is a teacher and Barb, the mentor, is a natural resource person; Richard is also in natural resources, while his mentor, Dr. Gordon, is in academia; Ken worked for a quasi-governmental Water Board and Gary was in natural resources at the time and is now in private business. Only a few have expressed feeling fully equal to their mentor. When this happens, there sometimes begins to be a reciprocation back to the mentor. Cem has now reached the same

Table 5.5 Movement in professional alliance during mentoring.

PROFESSIONAL ALLIANCE

	Novice -->	Colleague/Co-Lateral Peer -->	Equal
1A			@John (Bob)
1B		@Wendy (Glen)	
1C			Ed (Barb)
2A			Dr. Gordon (**Prof U*)
		Richard (Dr. Gordon)	
2B		Ivo (**Orin*)	
		Ivo (Sally)	
3A		Paul (**Aldo*)	
			Cem (Paul)
		Ann (Cem)	
3B		Gary (*Ernie*)	
		Ken (Gary)	
			#Liz (Ken)
3C		Robert (*Grant*)	
		Carol (Robert)	
		Pattyanne (Carol)	

colleagues	@	in the same type of work
	#	in the same workplace
co-lateral peers		similar levels, but in different areas_________
equal		same level, may have reciprocated mentoring
	*	deceased

academic level as his mentor and they exchange information back and forth. Both 'prime mentors', Barb (Record 1C) and Ken (Record 3C) use almost the same wording when they describe a reciprocity with their 'alpha mentorees'. Ken said, "With Liz, I have probably learned as much from her, if not more, than she has from me. If anything, I would say she has really mentored me more than I have mentored her". Barb stated, "It's funny because if somebody had given me the question of who I think a mentor is, I would have reciprocated Ed's comments".

Other comparisons

Other similarities across the three cases show that childhood background is important for cultivating an awareness of the environment. Although people in this study so far have been from three different countries, they all cited various places and natural wildlife which have contributed to their commitment to the field. Paul (Record 3A) described his Tennessee Valley in America, Dr. Gordon (Record 2A) remembered his South African plains, and Glen recalled his boyhood in the Australian bush. The theme of loving bird life is a thread in the autobiographies of Dr. Gordon, Yambert, and Richard, while butterflies are a common point of interest between Carol and Robert. Sometimes this interest has little direct bearing on their mentoring experiences, other times it becomes a tie that binds the mentoring pair.

Choosing the mentor for environmental education

Two prime mentors, Ken (Record 3B) and Ivo (Record 2B) mention having more than one 'supra mentor'. Ken described another six year long relationship with a mentor thirty years his senior. When asked to pick the one most significant for his environmental education, he chose Gary whom he knew intensely for only four years. He recognised that both people had similar proactive attitudes to environmental education, that is, we can all be winners if we work together. However, Ken pinpointed certain attitudes and skills he learned from Gary and the opportunities afforded him to extend into new networks. Ivo also considered other people who were influential at various times of his life, but found his life long-friend, Orin, the mentor who led him to science teaching and from there to environmental education.

Transmission of mentoring - the 'cascade of influence'

The most important message from all three cases is that mentoring should be passed on. Paul gave an eloquent summary when he recalled 'pilgrimages' with his students to places such as Aldo Leopold's farm.

> *... it seems to me that one of the most significant outcomes is 'bridging the generations', ie. taking students to whom I might be a mentor to commune with someone who was my own mentor - a variation on the great chain of life. There is something analogous to DNA here. Consistent with my earlier point about mentors avoiding creating clones of themselves, we can argue that receiving cultural and intellectual 'genetic material' from an historical chain (or web) of mentors will result in better mentors in the future. Most folks who regard themselves as environmentalists have a time frame which exceeds the average by a sigma or two - in both directions. A time frame which extends far into the future aids us in focusing on the truly important challenges. A time frame which extends far into the past allows us to sift and winnow the best from our mentors, grand mentors, and great-grand mentors. Of course some are much more receptive to 'mentoring' than others.*

The 'receptiveness to mentoring' by the mentoree has been seen across Case Three. John (Record 1A) was ready to model Bob's method of teaching environmental principles to the kids so that they would carry the message back to the parents about wildlife. Sally (Record 2A) was willing to use techniques she had learned from Ivo when doing fieldwork with her biology students. Pattyanne (Record 3C) imitated Carol's facilitation methods for teacher in-service workshops. Importantly, all went on to develop their own style.

None of these environmental education mentors was interested in creating a clone of themselves. Glen (Record 1C) gave Wendy the information to become a winning conservation teacher in her own way. Dr. Gordon (Record 2A) applauded Richard's work as a natural resource person extending the environmental message to a community-wide audience. Paul (Record 3A) embraced Aldo's principles of conservation put forth in *Sand County Almanac* and taught it to his pupils. Cem carried on Paul's teaching of ecology and added his own lecture on 'joining the clan' of past environmentalists. Ann showed her willingness to learn from Cem at the Nature Centre, yet became an autonomous mentoree and moved off into more challenging situations.

Paul's concept of ' bridging the generations' does not hold in the pure sense of age difference when speaking of 'grandparent mentors'. This is part of the reasoning for using terms such as 'hyper' meaning 'beyond' and 'supra' meaning 'above'. This gives a sense of placement without necessarily referring to age, an important idea for this study which has participants like Gary and Ken, Carol and Robert and others who were contemporaries. It also avoids the idea of hierarchical importance, since each mentoring set has similar patterns, but unique experiences which they found beneficial.

The phrase 'communing with a mentor's mentor' emphasises why it was important to trace back the mentoring chains when the opportunity arose, even though the extra interviews seemed to move beyond the original design of the study. It was important to find out what messages about environmental education got passed on to the next mentoree - to understand how mentoring allowed one to 'winnow' the best from a previous mentor, no matter their age, and how it might encourage one to 'focus' future mentorees on their own challenges in environmental education. If Paul's idea of 'receiving cultural and intellectual genetic material' from a mentor is valid, then it underlines this study's emphasis on the personal and professional dimension of these mentoring relationship and points to the theme of Case Four - philosophical development.

5.4 Case Four - Webs

5.4.1 Introduction

Each record in the preceding three cases brought out different themes which build a consolidated picture of the concepts involved in mentoring. All the stories narrated pieces of autobiography which placed the mentor and mentoree in their environmental education context and traced the initiation, development and sustainment, that is the continuation, of the relationships between various mentoring pairs.

Case One followed mentoring pairs - the alpha mentoree and the prime mentor. The three records highlighted how careers progressed alongside the mentoring relationship as well as charting the mentoree's advancement from student to practitioner to leader. Importantly, the case pointed out the influence of the mentor during this transition.

Case Two examined triads consisting of the alpha mentoree, the prime mentor and the supra mentor. It disclosed the personal side of mentoring by showing how relationships can move from a level of acquaintance to support to friendship. The concepts of perceived and acknowledged mentoring were distinguished by an awareness of the mentoring relationship. The middle person of the triad, being both a mentor and mentoree, has been shown to pass on certain mentoring traits.

Case Three examined four-person chains, that is, the alpha mentoree, the prime mentor, the supra mentor and the hyper mentor. It revealed how the mentor in each of the relationships in the chain encouraged not only personal development, but also professional alliance. Each pair in the chain modified their professional views towards one another as the mentoree moved from novice to colleague status, if they were within the same workplace, or that of co-lateral peer status, if they worked in different areas. Some mentoring pairs finally saw themselves as equals and a few discussed a reciprocal mentoring process. A 'cascade effect' was hypothesised as the mentoring relationships changed from being perceived to acknowledged between the pair leading to deliberate mentoring of others.

Case Four will examine webs of mentoring relationships based around two 'pivotal mentors' each of whom was singled out by different leaders as a common mentor. The mentoring web then extends to new people labelled 'beta mentorees'. It will show how mentorees develop their philosophical understanding of environmental education during their mentoring relationships as they move from awareness to an ethical stance to action. The congruence of thought and commitment between the mentor and mentoree will be seen as a key factor in the sustainment of the relationships despite periods of dormancy or rupture. Case Four will also provide more exemplars of the deliberate transmission of mentoring.

It is important to understand that, in all four of the cases presented, the general movement from perceived to acknowledged to deliberate mentoring is not tied to the relative positions of the mentors and mentorees. The construct of terms - hyper mentors to beta mentorees - simply provides a vehicle for structuring the mentoring stories to understand how far back mentoring relationships extend or where they move forward.

What is important is recognising the 'cascade of influence', ie. the process of mentoring which is deliberately passed on to others in environmental education. It may happen at any point - between pairs, within triads and chains and among webs. This is the core concept to emerge from deconstructing the past mentoring experiences of the participants and is seen as the link to professional development of future leaders in environmental education.

Webs of relationship - Records 4A and 4B

Case Four is distinctive because it involves pivotal mentors. Because these are complicated groups of relationships, they are termed 'webs'. The mentorees in each of the two records may or may not know each other depending on their network connections, but none was influenced by the others to select the pivotal mentor. Most of the participants in Record 4A are grounded in environmental education from a geographical point of view, while the people in Record 4B come from an environmental science perspective. Both webs demonstrate that age is not a critical factor for a relationship; they provide examples of a cascade effect through the deliberate mentoring of beta mentorees; they highlight the broadening of mentoring experiences for women in environmental education; and importantly, they stress the philosophical congruence between the mentor and the mentoree.

5.4.2 Record 4A

Record 4A actually involves three sub-stories as shown in *Figure 5.8.* This web of mentors and mentorees is compared in the diagram with the three chains from Case Three in order to see the pattern of relationships. The original mentorees in Record 4A came from three different areas of environmental education. Mary was recognised as a leader from a

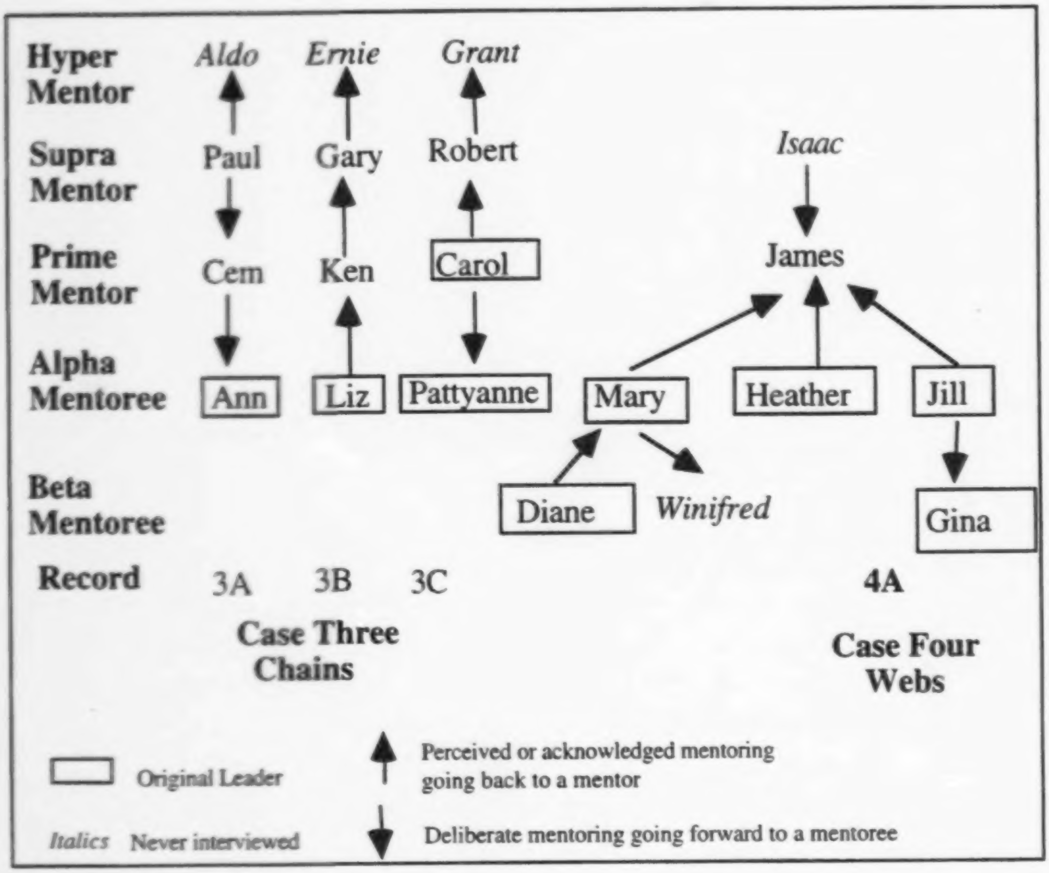

Hyper Mentor
Aldo
Ernie
Grant
Supra Mentor
Paul
Gary
Robert
Isaac
Prime Mentor
Cem
Ken
Carol
James
Alpha Mentoree
Ann
Liz
Pattyanne
Mary
Heather
Jill
Beta Mentoree
Diane
Winifred
Gina
Record
3A
3B
3C
4A
Case Three Chains
Case Four Webs
Original Leader
Italics Never interviewed
Perceived or acknowledged mentoring going back to a mentor
Deliberate mentoring going forward to a mentoree

Figure 5.8 The comparison of chained mentoring presented in Case Three and webbed mentoring in Case Four.

department of natural resources, Jill was an independent environmental education consultant, and Heather was well-known for her work in the Department of Education. All were influenced in various ways by a young university academic called James, and independently nominated him as their perceived mentor.

In Record 4A1 Mary, was nominated as a mentor by Diane. Although she was unaware of this perceived mentoring, Mary had already begun some deliberate mentoring of another mentoree, Winifred. In Record 4A2 Heather described the philosophical congruence with her mentor, James. This leads back to James's story of having had deliberate mentoring by his mentor, Isaac. In Record 4A3 Gina, explained her acknowledged relationship with Jill and Jill described her perceived relationship with James.

5.4.2.1 Record 4A1 James, Mary, Diane, and *Winifred*,

Becoming aware of environmental education

Mary learned to love the environment while moving with her parents throughout Australia. From those travels she developed an interest in geography. She reflected that, "the geography at school had no relationship to the environment at all. However, we did a bit of fieldwork, that I can still recall, and that is why I place a tremendous importance on it". In her opinion, the actual curriculum of the fifties and sixties "didn't consider environmental or social issues in any way, shape or form".

Her awareness was raised when she later became a teacher and the secondary geography education project and Vietnam war issues became relevant. Although she had travelled in Asia and visited tin mines and rubber plantations in the sixties, she says that she still "bought into the need for development". Closer to home she became aware of the clear felling in Tasmania forests and reflected, "Those sort of local issues started to raise my concern, but only local issues that didn't impinge on my world. My world was still secure, still comfortable. I could quite easily get self-righteous over someone else's problem". As her own views and teaching became more 'green', she more fully understood the link between fieldwork and teaching environmental and social issues. However, Mary was still aware of treading on the toes of her principal at school and, like Pattyanne (Record 3C), she explained, "I just timetabled in fieldwork and then battled the administration, because I really felt that the most effective learning took place in the field".

Meeting the pivotal mentor, James

Mary rose to become head of department and subject master and also became the president of the Geography Teachers' Association of Queensland. It was at this time that she began to see James, a university academic, younger than herself, as her mentor. She had known him for five years and described the early part of the relationship with this "vocal, articulate and enthusiastic person" whom she admired.

> *James had been on GTAQ council and I had always admired him, although he can be quite frustrating at times because he is such a perfectionist. He was like this sort of guru, if you like, and I still have absolutely the greatest admiration for him. His ability to write, to talk, just left me amazed. But the other thing that really struck me was the things he didn't do for personal aggrandisement. And that set him apart from a lot of other people and still sets him apart. His concern with GTAQ ... and that is a very rare character I think in people.*

Mary said that James had influence on her even though she was not involved directly with him in her school nor at his university. With a suggestion from her perceived mentor, GTAQ became involved with a teleconference to support a new program called Landcare. With the support of key personnel at the DPI (Department of Primary Industries), the conference was a success and Mary stated, "That really inspired me to start thinking about environmental education".

A career transition - leadership beyond the classroom

When the job as Landcare coordinator opened up within the DPI, Mary, like Carol (Record 3C), had to seriously consider her move away from the classroom to a natural resource agency and she recalled:

> *They had a big Landcare awards night and I was invited to go ... I left the evening absolutely amazed and*

> *staggered and I thought I want to be part of this movement called Landcare because I could see ordinary, everyday people achieving fabulous things. ... I thought I have to apply for that job ... I put my application in at five o'clock on the day it closed. It really took me that long to know that after twenty-two years I wanted to get out of the classroom and into something else.*

Development of the mentoring relationship

That career transition moved Mary to a leadership position in environmental education as the coordinator of Landcare throughout Queensland. Mary spoke of a change in perspective that the new job wrought and how the mentoring relationship she enjoyed with James moved to a different professional phase while the personal friendship became enhanced.

> *Since 1989 I have used James often as a sounding board and now we are really close friends, not in passing and not just as a mentor. I could ring and talk over anything with James. So in the mentoring role I'm very comfortable about saying to James, 'How shall we do this or is this appropriate?' ... I suppose that now he is beyond a mentoring role, but he still is there. We're colleagues.*

It is important in any mentoring relationship to see each other realistically. Mary saw neither herself nor her pivotal mentor through rose-coloured glasses as she described their personalities:

> *Maybe we both have some similar characteristics of personality. His desk is always immaculately tidy and mine is an absolute disaster, so we're at the opposite extremes. But I think we both are also indefatigable, we don't give up. We don't see problems in the way; hurdles are there to be got over. We don't say no, something can't happen. So maybe there is within us a feeling that we can go beyond.*

Mary's comments bring out an important factor that mentors and mentorees do not have to be alike in personal habits but perhaps they do need to share some philosophical dispositions regarding what is important for environmental education.

Environmental education - the philosophical link

It is important for a mentor to enrol the mentoree in his/her vision of environmental education, but strong relationships allow for disagreement as well. Mary mentioned that she had not "targeted her thinking to fit in with James's". She spoke of modelling James's workshop techniques but keeping her "own convictions that things had to be activity based". Together this pair feed off one another's vitality, mutual respect and support.

> *It was important to me, because I had such admiration for him, that he was supportive of what I was doing and he has been. I think he possibly has learned from me ... He's said to me on a couple of occasions, I don't really know what Landcare is about. So, hopefully, he's gained something from my involvement with him. It has not just all been a one-way process.*

Mary has moved from awareness to defining her environmental ethic to an action based movement like Landcare. Yet her mentor recognised the fact that most former classroom teachers never got the opportunity to speak at conferences and present papers. Therefore, James extended the professional abilities of his older mentoree by nominating her as speaker for the 1992 World Environment Day. She described the results which showed a reciprocal confidence in her mentor.

> *So I came back and told James, 'We left them in the aisles'. You could say that to James, but you wouldn't say that to other people. ... He's never been critical or, if it has been critical, it's been constructive. But he's always supported what I have done and similarly I have supported him.*

In discussing their philosophical beliefs about environmental education, Mary emphasised that if one had a totally different philosophy one probably wouldn't get on with James because "he doesn't tolerate fools gladly". She characterised the finer points of this mentoring relationship between an academic mentor and a practical mentoree.

> *My philosophy has become more realistic, whereas I think James is still very idealistic. But I think he's sort of starting to learn. I think at times he's a bit politically naive. I think he is becoming aware that people are trying very hard and that rural communities are trying to improve their situation. We do have similar philosophies ... I'm probably a little bit more conservative over the years, but I think that is because I have become a bit more realistic and realise you can't solve all your problems overnight. ... My dealing with the rural community shows that some of those people are victims of circumstances and we have to understand and there are a lot of social implications of environmental issues.*

Although James and Mary have different philosophical approaches to working with environmental education, their agreement on the basic goals have allowed him to be an effective mentor. When asked if James realised that Mary considers him a mentor, she replied, "I don't know. I think he realises that I consider him a very close friend at this point and I don't think he would be surprised to hear that I consider him a mentor".

Mary - perceived as a mentor

Mary, like James, was pleasantly surprised to find herself considered as a mentor by Diane, a young facilitator with Landcare. On her survey, this beta mentoree had defined a mentor as "helping to guide someone, providing experiential knowledge, someone to look to for advice, giving critical feedback with honest and objective reflection". Presumably Mary met this criteria for her. When Mary was told about Diane's perception of her as a mentor, she was asked what the attraction might be. Mary described her mentoree's personality.

> *Diane was enthusiastic and also not one for there to be stumbling blocks. She, I think, will try things. She is very down to earth ... She was good with the kids, approachable, young, enthusiastic, and you could talk with her about ideas. So I came away feeling really quite enthused and impressed by this young person. Education wasn't her field, but she was prepared to*

> *come into that. She was prepared to listen and talk with you.*

This description shows similar attraction between Mary and her own mentor, James - enthusiasm, approachability, willingness to try new things, ability to communicate. Mary noted Diane's practical approach, openness and truthfulness, while Diane recalled:

> *I like listening to people and ... Mary can cover a whole range of subjects ... I spent a bit of time with her in Brisbane and doing various workshops around the state and stayed at her place. And just seeing her in her own environment and coping with a household as well as keeping the job constantly going.*

Diane said she didn't know if Mary ever really knew that she was mentoring her, but obviously Diane perceived it that way and was quite willing to acknowledge it.

Congruence of philosophy and practice

To understand Diane's position more fully, it is important to understand her own contextual background. She became interested in the field of environmental education through a high school geography teacher who had his students study the wet ecosystem around Botany Bay. They focused on a real problem in their local area - that of putting in a second airport runway - and then had to consider the implications it would have on beaches and mangroves. This interest in forming opinions based on science and social interactions led her to attend her teacher's *alma mater*, Hawkesbury College.

> *It is a different type of education at Hawkesbury. It is self-initiated learning based on your own learning autonomy and communication, so it is not set lectures and we weren't assessed by exams ... But it was all about a systems approach as well and that leads you to the process of sustainability and the environmental side of it.*

Diane said that she considered herself an environmental educator because she not only has the science background, but also knows the process to find out information which included working with communities and schools. A mentoring relationship blossomed over three years because of Diane's need to find out how to communicate the Landcare program to schools. She described the professional knowledge she learned from her mentor:

> *I hadn't done much with the schools before. And just working with Mary and a couple of meetings with her and seeing her work with the group - it wasn't just passiveness. She was very much trying something different, getting people involved. She is a very hard worker as well and puts in a lot of time. I suppose I'm not one to get there at seven o'clock and leave at six o'clock which Mary does, but the amount of work that Mary is able to do and the different things that she has going and can keep going. I don't think that I can ever be like her, but there are qualities that I admire.*

It is interesting to note that Diane sees the same sort of 'work-a-holic' tendencies in Mary that Mary noticed in her mentor, James. But like James, Diane noticed that "Mary can get a tremendous amount of work done, but she doesn't impose it on anyone else." From the perspective of mentorees, both Mary and Diane recognised differences in the personalities of their mentors which they admired and yet did not expect of themselves. This seems to be an important factor for a relationship in which both people are allowed to be authentic in their own right.

Mary as an effective mentor

Diane explained why Mary was an effective mentor and her statement showed similarities with Mary's description of James.

> *I get on with Mary very well and I admire what she has been able to achieve in her own work and the information and advice is very relevant to me ... I can ring up and say I am having trouble with this person. She knew the situation and she couldn't do much about it except just to listen. And she never really told me what to do, but she could just reflect back what I was thinking.*

The themes of attraction, achievement and advice are characteristics seen as important to the cascade of mentoring. The fact that Diane emulated Mary's teaching techniques exemplifies this mentoring pair's shared enthusiasm and similar philosophical approach toward environmental education. Yet, like the relationship with James, Mary recognised that Diane would disagree with her and use other people to test her ideas.

Watershed memory - developing the relationship

Like Ann and Cem (Record 3A), both Mary and Diane recalled the same watershed moment in their relationship pointing out how the personal part of the relationship gained importance.

> *In that sort of packing up and moving out time, we were able to sit down and talk about what Diane had done and how she had done her studies and what my goals were and how we had sort of similar goals as to what we wanted students to do. I think possibly that time I got to know her and she probably got to know me. She was twenty-four or five and here was me forty-three. Sort of an interesting relationship. But it was at that time that I really felt very comfortable with Diane .... I admired her when she from the first time I met her ... almost twelve months down the track I felt that we could talk about issues and had similar sort of interests.*

Diane's recollection of this incident showed how the personal and professional part of the mentoring relationship began to overlap.

> *She drove back from a workshop when I was moving to Ayr the next week and there was something else I had to do. She helped wash down the walls for me. I didn't ask her to do that. The personal is a big part of Mary anyway.*

According to Diane, the relationship has progressed and, if they are not able to share physical time, they communicate easily by phone about both personal and professional matters.

Broadening horizons

Diane described Mary's leadership style as a shared leadership, "she will congratulate us if we have done good work, but it is never telling us to do anything. She is there to learn things as much as we are". Just as James offered Mary opportunities to increase her public speaking skills and reach out to more professional audiences, so too, Diane explained how Mary helped expand her network base.

> *People that Mary recommends that I speak with are not often directly related to the role [of Landcare], but people who might be good to know ... If you seemed very happy sitting there doing your job, she might suggest someone or to do something you hadn't thought of before, which broadens your outlook.*

Asked if their relationship might change as Diane moves into a more local situation where she will see Mary less frequently, she stated, "I won't be seeing her as much, but we can pick up where we left off." This ability to maintain a mentoring relationship in spite of career and personal change is an important factor in sustaining a relationship built on a shared framework of environmental philosophy. Diane discussed this congruence:

> *The challenge is her really saying, 'Are you teaching them something? Are you talking to them or are they actually taking it in'. The challenge is really getting those kids to develop their ethics and that is really hard to do, because it takes a lot of time and is mentally exhausting. She asks how we are dealing with the schools and with producers ... Just seeing her do a couple of sessions ... it takes a lot more preparation, but is a lot more effective and creative.*

Distinguishing the environmental education mentor

Diane had no trouble distinguishing a role model from a mentor. Whereas the former, you might just sit and listen to or admire from afar, "a mentor you can entrust in them what you are thinking and feeling and how it affects you and they can either just listen or reflect back what they have heard you say you're thinking". She added that if she were to become a mentor it would be a learning experience, a way to get feedback and a challenge to her own thinking. She stated that at this time she won't go out and look for someone to mentor, but she will make it clear that she is available.

Mary matched Diane's definition of an mentor for environmental education which is someone who "strongly believes in what they are involved in and expresses a strong personal interest in the values and beliefs of others". Diane noted that she had gained an understanding of active learning and listening and had developed better facilitation skills as a result of working with her mentor. The beta mentoree said that Mary taught her that in the field of environmental education, "you aren't really doing your job unless you are getting people to become involved and to really examine their feelings".

Deliberate mentoring - *Winifred*

Mary was conscious of the benefits of mentoring, particularly after describing her own relationship with James and discussing her mentoring of Diane. And yet, she felt that James's mentoring of her and her mentoring of Diane "has been fairly accidental". Importantly, she, like Paul (Record 3A), verbalised the need for a continuation of this process as she speaks of another mentoree, Winifred.

> *I realise that there is quite an enormous potential for me to be a mentor to her. Now with Diane it was totally unconscious. With Winifred it can be more conscious.*

Commitment to the process of mentoring

Whereas circumstances in the new leadership position brought Mary and Diane together, Winifred had asked for Mary's specific help perhaps because of her experience as a teacher. Both beta mentorees required a commitment from their mentor.

> *My concern for them is important. Because I have achieved some success, I have to be prepared to put that aside to encourage others so they achieve success. That may mean that things that I might want to do and take credit for, I might have to leave go. But if I am going to*

> *establish a mentoring relationship with Winifred then it means that I have to put myself in a secondary position.*

Not all participants in this study might agree about putting themselves in a secondary position in order to encourage their mentoree, but they would probably understand why Mary opened opportunities for Winifred by taking her to a national conference. This is evidenced in the relationships between Sally and Ivo (Record 2A), Cem and Ann (Record 3A), and Patty and Carol (Record 3C). Mary stressed the need of being able to be there as required "without making it a dependency, because you don't achieve anything then." This remark echoes the sentiment of Paul and Cem (Record 3A) and Bob and John (Record 1A) who saw no need to make clones. Mary went on to explain:

> *I firmly believe that you can't be somebody else. You just try to be yourself. I think that is really important for mentoring. You don't want clones of other people around. It's like putting the wrong clothes on people ... because it will backfire. If the person sees characteristics of you that they would like to emulate, then ... it is their decision to do that.*

Mary, like many others interviewed, had little hesitation in distinguishing mentoring from other forms of support.

> *The network person is just part of a web. Some of those people you only know their names and don't have any relationship particularly with them, but you act as a facilitator if someone wants information. Whereas mentoring is very much a part of a much closer relationship and a more meaningful relationship than my black teledex.*

The common goal - environmental education

Speaking of both Diane and Winifred, Mary highlighted a most important factor for this study - a philosophical congruence regarding the goals of environmental education.

> *Their role is very important and they can make or break a lot of things in relation to education and the*

> *community ... We have a common goal. And that common goal is environmental education in its widest sense. I think Landcare covers soil, water, flora and fauna. The only thing missing which makes environmental education complete is the air and we can tie that in, no worries. Their goals are similar to mine and as to what we have to achieve for our job. Diane and Winifred are a couple of people who are prepared to work with an older person in a collegiate relationship.*

Mary concluded that her progression towards a philosophy of environmental education had been slow, saying that she "has just been parallel to those people being the high fliers" - ie, those very directly involved with issues. She contended, "I never saw the need to be part of this movement or this 'old guard' of environmental education. I suppose I am linking in with the newer guard ... through Landcare which is more giving and sharing and less dogmatic, more realistic, but not less idealistic". She saw James, her own mentor, as being on an academic plane, as opposed to herself and her mentorees' practical day to day work with the schools and the community and reflected, "it may mean that our goals in environmental education take longer to achieve".

In pondering how mentoring can have both philosophical and professional sides to the personal relationship, Mary summarised her position.

> *I think in the field of environmental education mentoring is tremendous, because professional development is a very difficult thing to grapple with. So that what you have done for me actually is to have opened up the idea of mentoring as a means of a person's professional development. And I know that I have very definitely developed professionally from being mentored by James ... It has been very interesting to reflect. We don't take time for reflection often enough.*

5.4.2.2 Record 4A2 Heather, James and *Isaac*

A sense of place - awareness of the environment

The theme of philosophical congruence coupled with professional alliance underlies the next strand of Web 4A. Heather is another 'alpha mentoree' who describes how she also perceived James as the 'pivotal mentor', while James explains how Isaac, his 'supra mentor', helped to set his philosophical views toward environmental education leadership.

Some contextual background is needed to understand Heather's affinity for environmental education. She is originally from a fairly large city in England where she grew up in the outer suburbs. Heather described her favourite spot where she played and visited as a primary school student.

> *Just up the road was a National Trust property with a wood cutter's cottage and myths to do with the giants that were supposed to have lived in this place and the whole place itself dated back originally to an Iron Age Fort ... like the movies you see of Sherwood Forest. We used to spend a lot of time there as kids playing. We also used it in school ... teachers used it as a teaching resource. So I became interested in Nature studies in primary school.*

The description of a 'sense of place' has been vital to instilling environmental awareness and is chronicled by many of the participants in this study such as John's mountain (Record 1A), Barb's river (Record 1C), Paul's trails and Aldo's cabin (Record 3A), Robert's canal and Carol's lake (Record 3C).

Fieldtrips - a key to environmental ethics

Fieldtrips and fieldwork were critical to exposing the need for an environmental ethic to many of the mentorees and mentors such as Ed and Barb (Record 1C), Richard (Record 2B), Sally and Ivo (Record 2B), and almost every participant in the webs of Case Four. Like these people, Heather stressed her love for fieldwork which carried through in her physical geography course for her A-Level exams. She credited her geography teachers saying:

> *They were ahead of their times in terms of decision making and geography techniques and using fieldwork and doing a variety of exercises, it wasn't just bookwork, it was all sorts of things - role plays, statistical exercises the works. The sort of thing that these days would be fantastic teaching, we're talking about the seventies now.*

Selecting higher education for the environment

Like many of the participants, Heather's choice of a university program was important in her future career in environmental education. Diane chose Hawkesbury for its systems approach to problem solving, John (Record 1A) chose Colorado State University for its network of natural resource personnel, Paul (Record 3A) and Robert (Record 3C) were able to 'engineer' special majors to accommodate their interest in environmental studies. So, too, Heather was able to enrol in Environmental Science at the University of East Anglia in Norwich and stated, "that was where my interest in it really kicked off; that was where I decided I had made the right choice because the course was just great. It was one of the foremost courses in the world at the time". She finished her degree in biology and became an environmental health officer in England for several years.

Meeting the pivotal mentor - James

Eventually Heather moved to Australia and decided to train as a teacher when she met James. She reported the initial contact between a mature student and a beginning academic.

> *I was in his class for geography and geographical education. And I think that James just matched with the experience that I had with the geography teachers. It was the same sort of approach, full encouragement, and allowing me to be very flexible in doing assignments. And I just found James extremely conscientious and competent in geographical teaching.*

A bit more serendipity was discovered as James was using innovative ideas that he had just learned when he had studied in England himself. Tim O'Riordan, who was well known in the environmental field and had been Heather's student adviser and referee at East Anglia, was also a network associate of James's. James commented on the importance of that connection:

> *The days of my life where I came to reconceptualise a model of education came from my work in the late 1980s in Great Britain working for the Geography Sixteen to Nineteen Curriculum Project where a particular curriculum model with implementation of the objectives of environmental education was developed.*

Although a developer of the project, James was also 'an insider critic of the philosophy' and felt that it still 'separated people from the environment". From there he said that he moved to a second stage of thinking where environmental education had "a role to play in broader social change", particularly through geographical education.

Early teaching career

Heather completed her qualification and secured a position teaching a subject called "People, Society and Environment' which fitted her philosophical approach as seen by her remarks:

> *One of the reasons that I've always stayed in education, and particularly environmental education, is that we all like to think that we've left something on earth. ... I've always felt that the strongest impact that you can have on this world is to educate others, particularly young kids. And if you can educate them in something as important as environment then you've got the best of both worlds. And you have something that you have had some impact on this world, globally. There aren't all that many other jobs that you can say that about.*

When Heather began to teach, James was impressed with her integrated social science course and its stress on the environment so he sent many student teachers her way, thereby attesting to her credibility. But he went further, and, as her mentor, he invited her to present a paper at the 1986 Australian Geography Teacher's Association conference. Heather commented, "I think that started James's requests for papers and workshops and guest lectures and so on. And we sort of got back in contact then".

Career transition - support of the mentor

After several years of teaching, Heather, like many of the original group of leaders, made a career transition to the Department of Education and one of her projects was writing a book on teaching for ecological sustainable development. She described the support of her mentor during that time.

> *James was on the reference group with that. I phoned him up to ask if he would help me out and we started seeing each other a lot regularly again and I sent him things to comments on. And since then, I got dragged into things like the Australian Association of Environmental Education as their secretary ... when James was president of the national and all other sorts of things ... I can always count on him to help me out on things. And if I need some ideas, about a particular way of doing something, I can just give him a ring. He always has his finger in every pie and he can come up with an area of sponsorship or something like that.*

Heather pointed out the characteristics of an effective mentor for professional needs - availability, extending the opportunities, networking, and sharing ideas. She stressed that, "the networking side of it is important. If you have a mentor who is really well-known in your area where you are just starting off, that can be extremely valuable for you". Like Diane, she said it "starts broadening your ideas. That was the main thing that James really did in a sense, not just the motivation, but having it lead to such a wide network, always mentioning me to people he knew and vice versa". We have heard this same testimony for other mentors like Barb (Record 1C), Cem and Paul (Record 3A), and Carol (Record 3C).

Development of the relationship - accepting differences in personality

The relationship was also able to grew into a more personal one as James and Heather visited for dinner. But as Mary pointed out and Heather reinforced, "He's a work-a-holic, but you can persuade him to be social". When asked if they challenged each other philosophically, Heather gave this description.

> *Yes, as we've gotten more familiar with each other, we have a bit of a laugh. I'm not a particularly radical environmentalist, I guess, in terms of I don't always practice the sorts of things I preach, but I always have a laugh when I go down to James's place and see the dishwasher there and we can have a bit of an argument about that, and cats...We have differences like that, but mostly we see eye to eye.*

The pivotal mentor's contextual background

The differences in approach to the living out their environmental philosophy may be explained through James's autobiographical context.

> *There were not the usual nature experiences in my childhood that other environmental educators talk about. I went into geography teaching because of academic success in social sciences rather than natural science and mathematics. There wasn't that sort of range of interests that would logically lead to it. There was a strong trade union and social justice perspective in my family values which led to my involvement, during young adulthood, in social movements. I guess looking for childhood experiences, it would come through that social side rather than through camping or forest walks or the like.*

James's involvement with environmental education arose from his initial involvement with the anti-Vietnam movement in the early seventies and the peace movement in the 1980s. A landmark for James was working on the International Year of Peace committee and involvement in 'green politics', regarding issues such as Lake Pedder, the Franklin river, and Fraser Island. He commented, "Those sorts of things are landmarks which resolved me to go one way or another. From each instance you learned something and moved on to the next". James preferred to take time with people who take environmental education seriously and Heather, like Mary (Record 4A1), commented on this.

> *I think to a certain extent you have to agree with James and the ways of environmental education. If, for*

> *example, you are very much still in the 'nature study equals environmental education' way of thinking ... then I don't think James would take too much time with you. But I think with me, I recognised the social side and the politics and all that sort of thing, and the interdisciplinary nature of environmental education. My basic views of environmental education coincide with those of James. So it was not too much opposition in terms of challenging things we believe.*

James agreed that on the professional level he believes in a great commitment to the message of environmental education and he recommended "no longer putting up with dillydallying around, negotiating nicely with conservatives". He further explained his current position.

> *I'm far more prepared, because of my belief in the urgency of the message given that one can die anytime ... to stand up and be counted on educational and social issues and to take a far tougher line with educational conservatives, geography curriculum people, people I call pseudo-environmental educators who don't locate their work within the need for the transitions to sustainability or who don't understand the need for social change or department of educational change. I'm far more prepared to be blunt with them as I am being blunt about it now rather than to be diplomatic and say let's look how we can talk about it and explore our differences.*

James's personal statement confirmed Mary's opinion that he does not 'tolerate fools gladly' and Heather's view regarding those whom this pivotal mentor might take seriously.

Working as colleagues

Quoting from Heather's survey, James was told that he had substantial influence on her personally, extraordinary influence on her career and was an effective mentor due to their mutual interest in environmental education. He listened to Heather's written definition of mentoring as "someone who has considerable expertise in an area and passes that expertise to a colleague" and then reflected:

> *I think there is something quite significant in those words in that they are very horizontal in the power relationship and the use of the word 'colleague' is quite significant and I feel pleased that she has said that. Heather was a student teacher and then someone who I supervised at prac and somehow worked with on a number of committees and group development projects. In terms of my now reflecting on the mentoring process that I may have unconsciously been involved in, that reflection is leading me to see that our level is involved with the establishment of those horizontal structures and a colleagiality, whereby it truly expresses my teacher education style both in terms of, I think, personal interaction and pedagogical style.*

James said that he tried to work deliberately at the collegiate level and referred back to Heather's contextual background at the University of East Anglia and commented:

> *O'Riordan's work has had an influence upon me, so we share that. You can call her up and discuss his stuff, so I think that I've learned as much from Heather who has had personal contact with O'Riordan more than she might have learnt from me about it. So I see it as quite collegial rather than mentoring.*

A move toward co-laterality

When mentorees work in different settings from the mentors, yet grow more skilled in their own careers, they move from being 'novices' to 'co-lateral peers'. This development in professional alliance can be seen in Record 4A. James, remains in academia, while Mary progressed in her leadership position within a natural resource department; Heather moved into administration within the Department of Education. The mentorees began to funnel new knowledge back to their pivotal mentor. Mary mentioned that James learned from her the details of Landcare. From Heather, he began to take on board the 'Healthy Schools Program' which seeks to broaden health eduction so that it overlaps with environmental education. The increased professional alliance correlated with strong philosophical congruence matured these two relationships into sustained mentoring over many years. Heather explained another factor in a long-term relationship, the sense of shared leadership.

> *Environmental education is more about cooperation, negotiating, the working of the team and I think that works at odds with developing hierarchy ... I think people look to other people as leaders if they respect them in their principles behind leadership. You can lead two ways. You can lead by fear and strong-arm tactics, some people equate that with the business world as opposed to leadership. Or, you can lead through natural authority. And, natural authority comes out of other people's respect. It's sort of like practicing what you preach. If in environmental ed, someone sees you practicing what you're preaching about environmental education, then I think you are more of a natural leader and people will be inclined to follow you in your examples.*

Heather, like many of the mentorees in this study, moved from student to practitioner to leader in her career and sought to lead by 'natural authority' in her new administrative role. The pivotal mentor, James, offered an interesting statement on the notion of environmental education leadership claiming:

> *I have a problem with the notion of leaders in environmental education because a vertical structure is implied in that. Another view of leadership being that all of us can be leaders at various things and that each of us have skills to offer and to share with others. I wouldn't use the word leader ever. I'd use the word sharer or facilitator ... the method of developing leaders needs to actually model the method by which we want them to operate themselves.*

James may have objected to the notion of 'leader', but both he and his mentorees fit the definition on which this study is predicated, ie.

someone acknowledged across several environmental education networks as an active leader. Comments from the survey data and the narrative stories have shown that few people ascribed to a vertical hierarchical structure for environmental education, except in cases where administrative decisions needed to be made efficiently. The majority of the leaders acted in terms of 'shared leadership' and that characteristic seems to be important in sustaining a mentoring relationship.

Sustaining the relationship over time

Because Heather and James work in the same arena of education, albeit in different organisations, they keep track of one another through various network connections. Heather said that when they do meet, "I don't think we have to backtrack". This sentiment has been observed among almost all the participants in this study and it seems to highlight an important feature of sustained mentoring relationships, that is, the spontaneity of the personal relationship is still intact and those involved can quickly brief one another on new developments in their careers and share their professional and personal concerns. And yet, Heather had never come right out and told James that she considers him a mentor, stating:

> *I think that he probably assumes it, because he is always my first port-of-call for anything. He has always acknowledged that I was a protégé, and he has a number of protégés, you know students that he has seen that way, but we've probably never spoken to each other about it; it's just an unspoken.*

Heather says that she has not often thought about her mentoring relationship with James which has lasted for eleven years, "it's just always there" and "we probably take each other for granted". She reflected that, "It would be nice for him to know, to listen to some of the things I have described and some of the things that he has said that have stuck into my mind". She recalls a watershed moment from her student days with James.

> *I think the one thing that made me realise that James was more flexible as a lecturer than some of the other people that I was likely to come across was when he let*

> *me do an alternative assignment. That really got my creative thinking going. It was a simulation game that he got in the UK. It was town planning exercise ... and he offered it to the class and I sort of jumped at it, he was sort of looking at me ... to take this simulation game and make an Australian local version. I still have it. It was a long time ago.*

James also remembered this incident and spoke of 'colleagiality rather than mentoring' when he talked about Heather doing the land use simulation assignment. However, he also gave her personal support in working through a problem with another lecturer regarding this project. To Heather, having both personal and professional dimensions in this relationship allowed her to see it as perceived mentoring.

In summing up the effectiveness of her mentor, Heather stated:

> *In the case of James, whatever his small faults might be in terms of things that I might not agree with, you just can't get past the fact that he would do anything for you and help you out and pass on any information ... But I just think in terms of the enormous amount of work he has put into me as a student and since, because he wouldn't have done that if he hadn't seen it worthwhile.*

Considerations for becoming a mentor - philosophical pheromones

If James perceived mentoring to be worthwhile for Heather and she acknowledged the benefits for herself, the next logical question becomes: is she ready to continue the process of mentoring?" Heather felt that she does a lot of networking for other people at this stage of her career, but probably it is not really mentoring. When ready, she would look for someone whom she thinks has a future in environmental education, has 'a bit of a spark' and is innovative with good ideas. She explained the benefits for her as a future mentor.

> *In purely selfish terms, the satisfaction of shaping someone else's career. You are passing on your ideas through more people, sowing the seeds of some of your ideas in that person ... Personal satisfaction of just*

> *knowing that you have done something for that person, helped them in some way in their career.*

When asked how one can connect a mentor with a mentoree in the field of environmental education, she laughingly suggested, 'philosophical pheromones' and then explained that it takes a meeting of the minds, that the spark of initiation won't form "unless there is something that you find so alike in yourself and that other person." The alikeness does not have to be in personal characteristics, such as organisational habits, as shown by Mary and James. Neither does it relate to the time one spends at the job, which is a difference between Mary and Diane, nor does it matter if one is a self-starter such as Diane or one asking for help such as Winifred. The 'spark' as seen in this web of relationships seems to be more of a environmental philosophical congruence. Heather explained:

> *Maybe there is just that spark and maybe it can't be forced ... I'm joking to a certain extent when I say pheromones, but maybe it is something we can't put our finger on and can't analyse to the extent where you can set something up formally. Maybe if you tried to do that, maybe it wouldn't work. ... You'd have to deconstruct it to say how does it work, that's the big problem, isn't it. ... It's all been a lot to do with fate, literally ... if I had taken this path something else would have happened. It really has been a chance meeting. Would it have worked if it had been set up formally? Would I have known that is what I was looking for?*

Heather brought out two important ideas; firstly, deconstructing the effective mentoring experiences of leaders in environmental education (the aim of this study), and secondly, accounting for a certain serendipity, that is, would she have known what to look for if she had been consciously seeking a mentor. She argued that one thing that has to be recognised by the effective mentor is "to let go of professional jealousy or secrecy" explaining:

> *In terms of analysing what the mentoring is, the successful mentor definitely has to have a view that through sharing their own personal information, what they know with someone else, is actually more powerful*

> *than keeping it to themselves, which was sort of happening in the past ... These questions have been very interesting for me too. I've actually reflected a lot on my motives.*

A further understanding of the motives of mentors and mentorees is revealed by looking at James's view of this relationship.

Accepting the mantle of mentor

During James's interview when he was asked to detail the mentoring relationship with Heather, he expressed concern with the description of mentor as shown to him on the survey. He said that it implied "a conscious process". He stated:

> *I can understand how they might mention some incidences and some exchanges and some collaborative work in either pre-service or in-service or curriculum development way, but I would never class myself as a mentor in a conscious sense of either of them. ... There have been particular tasks that we have worked on together, but I've worked on those sorts of tasks with a whole range of other people who might not have been in your primary sample. So, I don't see that my work with them is in any way exceptional compared to my work with a whole range of other people.*

James's statements point out two cogent points. Firstly, a mentoring relationship may only be perceived by the mentoree without verbal acknowledgment to the mentor. Secondly, the mentor may have a more conscious relationship with others outside this sample of leaders, but that was beyond the parameters of this study. Thirdly, does perceived mentoring rule out the effectiveness of the relationship for the mentoree? The researcher would argue that within the cases presented in this study, unacknowledged, but perceived mentoring is advantageous to the mentoree, while acknowledged mentoring is beneficial to both the mentoree and the mentor, and deliberate mentoring, like that begun by Mary for Winifred, is imperative for new leaders in the field of environmental education.

Sharing a philosophical base

James disclosed that he and his mentoree, Heather, shared certain beliefs about the politics of environmental education which he said forms a 'philosophical base'.

> *In terms of a strong philosophical base, I suspect that we have interacted many times about social views and we've been on a range of committees together where philosophical discussion has been quite a key component of the agreement before we move on. We've been on political campaigns together, and letter box drops and giving out how to vote cards, so I think that the fact that we share those social involvements is an indication of a common belief in the importance of a philosophical base.*

Seeing the success of a mentoree who acts on his/her beliefs was a memorable event for the mentor. Both James and Heather independently recalled a dinner for a UNESCO conference during which Heather received an award. She remembered:

> *I guess the highlight has been getting the AGTA award for the book, "Teaching for Ecological Sustainable Development". The amount of response for that, the letters from the University of Panama and the University of Teheran and so on. That keeps me going, thinking that at least when I write something it actually means something to people looking for that.*

Beyond noting her personal satisfaction, James saw Heather as playing a crucial leadership role in the larger circle of environmental educators.

> *At the conference dinner we managed to sit and watch a table which had formed of these Australian people. There were seven women all in their early thirties who were very active and animated and had not met each other before ... I felt a degree of confidence in the future of environmental education that there is this core of people to continue the work and I think they wouldn't be*

> *there and working with me had I had a vertical structure in that mentoring process.*

James pointed out that most of the senior positions in environmental education, at least at academic and educational levels, were held by men at that time. He was pleased that these young women would become 'the next wave' and reasoned that "you always need people who will follow on to do the work" and that you can't do that if "you create patterns of dependency". James, in essence, is talking about a 'cascade of influence' although he doesn't necessarily tie it to mentoring.

A recipient of deliberate mentoring - James's mentor, *Isaac*

James is an interesting part of this web because he was nominated as a 'pivotal mentor', that is, more than one person regarded him as their mentor. He saw himself, not as a conscious mentor, but rather as one who sought to foster professional, collegial and collaborative relationships with many of the people with whom he interacted. And yet, James acknowledged a mentor of his own.

> *One person has told me he was consciously mentoring me, even though I wasn't aware of it at the time.*

James commented that the mentoring' was "certainly never spoken about" and that he wasn't aware of it until afterwards. Although Isaac was not able to be interviewed, James explained his involvement with this mentor.

> *Isaac, who along with a guy called R. S., were the two I think of as founders of the environmental education movement in schools in the seventies in Queensland. Isaac at one time ... actually said to me to come along to do a particular task, because he had the view that when you were on a committee and you have some roles, you should never leave it until you have brought someone along to take your place. I said, 'You do that to me'. And he said, 'I have worked hard at it over the years'. And I said, 'why did you? That's means, I'm successful, doesn't it'.*

James revealed a vital point about the benefit which can accrue to a deliberate mentoree - being given the challenge of new tasks and being seen as successful among a wider network. This encourages the new mentoree regardless of whether or not the mentoring process has been made explicit between the mentor and the mentoree. When asked why Isaac may have chosen him as a deliberate mentoree, James reflected:

> *When I came from the country to Brisbane as a consultant ... I used Isaac in the southern suburbs as the base of the network, a person I went to for advice. So I think it was probably a mix of the way we interacted and what I could offer him by way of resources or styles of teaching, my social studies background ... We had a strong sense of social justice and views in common. I think it is because of that range of things he might have seen in me as a person to eventually assume some leadership ... I suspect that Isaac identified a personal commitment to a view of teaching, a professional commitment to hard work, and skills of doing it that he had seen as being worthwhile to develop.*

He recalled that Isaac was the senior person on the committee and would often 'dob me in for jobs', but that later he was thankful. Further comments from James indicate how the influence of the supra mentor has been passed down to the alpha mentorees.

> *Maybe to some extent, as I reflected upon that, I've always kept in my mind that whenever I leave groups there should be someone there to replace me. That was one of the reasons I felt so pleased about the group of young women at the conference. Perhaps unconsciously I was modelling myself upon that style that Isaac talked about.*

James's story of his own mentoring experience brings out the point that unspoken relationships often fit the definition of mentoring and it is only through taking the time to reflect on the dimensions and progress of those relationships that mentoring moves from perception to acknowledgment.

5.4.2.3 Record 4A3 James, Jill and Gina

James has known the third alpha mentoree, Jill, for over fifteen years and they share an interest in the geographical aspects of environmental education. Like Mary, Jill was an experienced geography teacher when James came to the city as a geography consultant for the Department of Education. He stated that the new job was 'a position of influence', and that he actually had to learn quickly from those around him. He found Jill to be "one of those people I saw as a source of support and knowledge". Exploring the idea of why he might be perceived as a mentor by someone ten years his senior, he reflected, "I think I was able to offer her things from other schools, but also things from my own research and reading".

On her survey, Jill had written her own definition of mentors as "people who provide a model and are capable of positive criticism, listen, but also explain". She added that a mentor for environmental education should be able to "to mix practice and theory". In his interview, James picked up on this idea and commented:

> *It's particularly significant with someone like Jill who is a strong practitioner and appreciates the philosophical base for her practice and often now still talks of discussions she has had with a range of people with a philosophical base in which the role of education was discussed.*

Jill's contextual background

To understand James's interaction with Jill and their common interest in geographical education, we need to look into Jill's contextual background. In doing so, we find parallels with others in this web of relationships. Like Mary, Jill was brought up at a time when there was little consideration about education 'for the environment'. Yet her love of the environment, was fostered by childhood time at her family's coastal beach house and, like Diane and Heather, she was influenced by a geography teacher at school.

Jill, like many of the others except for James and Liz in 3B, credited outdoor experience with helping to mould her attitude toward the environment. She recalled:

> *My girl guide captain was an exceptional leader and incredibly good. She was a vet by profession and still practiced. She used to take us camping in the most incredible places and we used to go on exploring trips and follow old railway lines and head off into the far distance on a compass line. Things like this gave us an enormous amount of experience of being in the environment. And she taught us an enormous amount of environmental care and principles without us realising that we were actually getting 'environmental education', because the word still hadn't been invented in those days - the forties and fifties and so on.*

During this stage of burgeoning environmental awareness, Jill felt "there was obviously a feeling that you look after the environment because you wanted to be in it and enjoy it. Environmental issues were very far away from me. I didn't have anything to do with it". This attitude is reminiscent of Mary who toured mining companies in foreign countries, yet the environmental impact never impinged on her own sense of well-being.

Interestingly, Jill moved to England with her growing family and it was there, in a setting similar to Heather's, that her environmental consciousness increased. She described a very small English village which was surrounded by farms and cows and living in a thatched cottage overlooking a green with public woods next to her. Like Dr. Gordon (Record 2A), she reflected that "being involved in a farming community you became very conscious of the environment there".

When Jill returned to Australia, she became a girl guide leader for her own children and undertook activities such as camps and hikes which she termed 'environmental education'. She commented that "it was just part of outdoor living, outdoor education, nature study or using the environment. We didn't tend to use the word 'environment ' very much as a sort of holistic term".

The belief is in the action

Jill's volunteer activity involving fieldwork carried over when she began her career as a teacher at age thirty-three.

> *I was heavily involving my students and myself going outside. I remember hauling kids over onto the public parks and golf course and the railway lines and, of course, it was unheard of at G. G. and still is I'm afraid in a lot of ways ... They now go up to their outdoor ed centre, but in those days I was the only teacher apparently taking kids out. It was just a natural development and I felt it was important to do it.*

This statement recalls the commitment of many of the educators in this study to fieldwork and Jill remembered, "I got both commended and complained about for my unconventional things that I did in school".

Widening the circle - a search for a mentor

To counter the resistance by some school administrators, Jill widened her circle of support. Jill explained that she did not have formal education training to become a teacher and therefore had to read and talk to people about their ideas. She commented, "So I had to spend a long time learning from other people. I think that is what really forced me into the positions of using a lot of mentors".

During the seventies, Jill became involved with the professional geography organisation and that is how she met the pivotal mentor, James. She recalled that James had returned from England with some new ideas. "At that stage, James was heavily into development education, in other words, ... third world studies and comparisons between rich and poor. Never a mention then of environmental education".

Eventually, Jill changed schools and reported that she had found her niche where she was able to develop an outdoor education camp program for grades eleven and twelve. She reflected that the climate was changing "from outdoor education and survival living as it was called in the seventies to a groundswell of care and thought about stewardship for the environment in the early eighties".

Not only did Jill's approach to teaching begin to change, but she took seriously her personal environmental responsibility becoming involved with national issues such as saving the Franklin River and the Great Barrier Reef, and woodchipping in northern Tasmania. James recalled that Jill might be one of only two or three geography teachers at a rally for rain forests or for the peace movement. He commented:

> *Certainly, I was grateful that our philosophical and social philosophy was consistent. She has been a big help for the conservation movement.*

These issues became part of her teaching and she and her mentor, James, developed lessons about the spraying of toxins during the Vietnam War and scenarios about nuclear winter. She stated:

> *I was always challenged about what I was teaching. I was one of the first people to teach whaling. When I look back on it, I was relating it to environmental education, only we still didn't call it that.*

Simultaneous views - geography and environmental education

James pointed out how Jill, Heather and himself saw a simultaneity between geography and environmental education regarding the teaching values, decision making and social participation. He said, "...we are at cross-fertilisation between geography and environmental education, so that one is informing the other" . This view was congruent with Mary's as well.

Philosophical consistency

Jill's mentoring relationship with James developed as a result of working on common projects which aimed toward this new view of geography curriculum. James explained:

> *And perhaps we shared a common philosophy which distinguished us on those committees ... Most believed that geography was about maps and physical features, and content. Others believed it actually had a social role. It was quite an intellectual conversation and so it is with work on committees and having to establish the link between geography and social justice, geography and environmental sustainability, geography and human rights. In having to do that the professional relationship developed.*

James stated that he and Jill are philosophically 'fairly consistent' and cited her strong social justice background which coincides with his. Jill confirmed this and recalled going to meetings with local environmental educationalists where her sense of ethics was challenged.

> *I can remember ... getting really highly involved in philosophical arguments on how to get across environmental education and how you could get people's caring attitudes developed. Because I was then out on my own doing environmental education consulting, it was really of importance to me to be able to sort some of these ideas out. James, by this stage, was the dominant person and we were considered practitioners.*

Colleagial working relationship

James began to work with Jill in a collegial relationship participating in workshops and writing together. Jill analysed this change in their relationship as follows:

> *He saw me as being odd, different - the way I was practicing in school ... Maybe he just wanted somebody who was receptive to his ideas ... We were both fairly imaginative in what we did, but also we were both not afraid of standing up and saying these are trials and we're going to do this ... I think both of us were out on the limb a lot of the time doing these sort of things. I certainly realised that the way he thought was streets ahead of the people I was associating with.*

Jill said she modelled her teaching on James's style when he occasionally came out to teach her class and felt "he certainly was my mentor in that". She also explained how over the years James had suggested books for her reading, "I now have this very expensive stack of environmental education books. Some of them are so hard and I really have to sit down and look at them very carefully. I think that has been part of our relationship". James used to joke with Jill about her shelf of books and that "when you pulled them out they actually were opened to places and that I was obviously using ideas from the books". Jill felt that the teasing "was partly admiration". Today a mark of the growth and sustainment of this relationship is that they now exchange book titles equally.

Legitimising environmental education

Both Jill and James began to look further afield than development studies during the mid-eighties and became involved with environmental education.

> *Then James picked up this 'environmental education' and suddenly we had this word faced with us. And James started literally flooding everybody in Brisbane with environmental education. We had seminars and workshops and papers and environmental ed conferences and the environmental education association started up. Still facing this position that there was no such subject, but we were all teaching it as much as possible in our geography courses and increasingly all the work you did in the field was associated with it.*

The department of education began to set up environmental education centres and it became accepted to teach local environmental issues.

> *It was only when you had a freeway going through or massive clearings of buildings or topping down all the local trees to widen the street that people suddenly realised that this is your part of the environment as well. ... By the eighties I was definitely engrossed in the environmental side of it. I had abandoned the development side of it as well, as had James.*

The personal/professional nexus - rifts and revisions

Off and on during this period James and Jill did some professional writing together. She characterised their working relationship.

> *I sort of react very strongly with him and we would work through ideas. We were very good and he would give me the overall concept idea and I'd come in underneath*

> *it and put in some of the practicalities. Then he would say, no, no that won't work.*

When asking about their personal relationship at this time, Jill stated, "At one point we did everything together, we used to go to plays, entertain with one another. We were quite close as friends. But he was ten years younger than me ... and in a very different age group". Jill noted that over the years the personal closeness changed and after the eighties she looked on James as "the mentor more than the friend".

In trying to analyse this change in the relationship, James pointed out a similar 'volatility' in both their personalities which accounted for some of their disagreements over the years. James remarked, "I'd say it was based upon us both being Taureans more than anything else", but added seriously, "she always maintains that professional link". Jill matched James's opinion, saying, "Part of it was because a) I was feeling my own ability and b) we are both Taureans so we both sound off, say what we think, so that if we disagreed with each other we had ding dong battles". This similarity in personality which Jill described as 'bossy' made it difficult to work together at times, but over the years they were often seen as a team. At one point the two had a serious falling out over a joint writing project, but over time they were able to bridge that gap and rally around each other when needed.

It is interesting to note that the two most volatile personalities in this web both suffered sudden severe physical ailments which made them stop and reconsider their own personal and professional lives. Jill had lost her voice in 1988 and that necessitated a move out of the classroom to some part-time university teaching and finally to her present job as an environmental education consultant. She said that her mentor was helpful to her during this time as she learned to prepare lectures and adjust to adult education techniques. When James needed a life-saving operation, his friends rallied around to support him including Jill. She commented, "I had been kind of away from him the couple of years before that. I came back to him during that time and things got sorted out and he has been fine". James said that he began to reconstruct his view toward his personal and professional life. He began to work on the premise of negotiated leadership and fostering new people to assume his roles.

Moving beyond the sphere of the mentor

James's influence as a mentor was tempered when Jill took a job at the Queensland Conservation Council and she reflected:

> *During that time I was less under his influence ... I swung over to being very much more influenced by the practicing conservationists, the government agencies and the people with whom I was developing new relationships ... In the beginning if James had told me to go and do such and such I probably would have done it, but nowadays I certainly wouldn't. The difference is I have more confidence in my own ability to do things.*

Today Jill has moved into a new area of leadership as national president of the Marine Education Society of Australia. As such she worked with a broad range of people interested in the environment and in doing so she has had to continue her own professional growth.

> *It is covering so many of these things like the conservation group, the teachers, the marine ed, the scientists, I have had to go very much more technical in my approach. I've had an enormous learning curve in the last few years, learning technical material and how to comment properly on environmental impact statements ... From a non-scientific background it has to be simple, but that is a good idea because we have to get some of these principles over to people who are not scientists.*

Sustaining the mentoring relationship

Jill said that the relationship with the pivotal mentor is sustained by a feeling of support and that by 'working together again, we have both learnt". When asked if James reciprocated by asking Jill for advice, she commented:

> *Yes, occasionally, he'd do that, but not a lot of the time ... We definitely go backwards and forwards. What has happened with James is that he has seen me develop and grow and turn into a slightly different sort of person,*

> *and certainly much less under his influence and that has changed the relationship again. But it is still very supportive and I think that James knows that I would support him, if he had some sort of questions to resolve ... I'm now becoming the mentor for people on marine stuff and he's let me sort of do that ... But he knows I am there, and I know he is there. And I've still got that feeling that if I rang him up and said look I've got this real problem, that he would probably turn around and attempt to advise me. And, I would accept that advice, that is the other thing, that I would still accept his advice. I would always consider it and, in many cases I would definitely accept it. I might challenge it, but I would certainly take some of it. That's how it stands at the moment.*

This on-going relationship has moved to a stage of support and co-laterality. Just as Mary had developed more expertise on Landcare and Heather on Healthy Cities, so too, Jill has developed her own leadership in marine environmental education. James, as the pivotal mentor for all three of these women, is still there as a supporter, yet none of these individual relationships seem to have retained an extremely close personal friendship nor do they appear to be 'quite equal'. It may be a question of basic lifestyle preference.

Discrepancy in lifestyle

Jill, like Mary (Record 4A1) and Heather (Record 4A2), pointed out James's dislike of being out in the environment which sets him apart from most of the participants in the study. Jill described this difference.

> *But we also had this funny thing that I used to tease him about that he would never come up to the reef or do my camps that I was taking for the geography teachers association or the outdoor ed ones that I was doing with Gina (her beta mentoree). He never would actually get out and do the things ... never get his feet wet. We've had this ongoing, running battle. He's never joined in any of those things.*

Despite a difference in personal preference, this mentoring relationship between an indoor theorist and an outdoor practitioner has been sustained over periods of rupture and repair, dormancy and reactivation. Especially inspiring to Jill, an older mentoree, was watching her younger mentor, James, set up the Australian Association of Environmental Education in the 1990s. This increased the respect between them, yet Jill was able to reflect, "It was also tinged with the realisation that I was quite capable in my own field and I didn't really need to be depending so much on him".

Reactivation through Reciprocal Skills-

Both James and Jill spoke of a recent project to which both the mentor and the mentoree brought their individual skills. Jill had been asked to evaluate a Marine Studies Project and recalled:

> *We are co-evaluators because two years ago I saw this ad that I sort of thought about and said I really don't have the technical background to do an evaluation, so I rang up James. See this is where I am still using him as a mentor.*

Jill had the practical fieldwork experience and expertise in collecting the data whereas James would act as the filter for the interpretation and provide a structure for analysis based on his familiarity with research projects. At this point in their professional work, they had become co-lateral and James reflected:

> *I would suspect that she would have put being a mentor in much the same category as being a colleague as Heather did, prior to our work on this research project together ... But she is doing all the work, I'm sort of talking about it. That perhaps comes closer to, I don't know whether to call that a mentor, let's call it a knowledge difference. But I suspect that she knows she is doing things on the research project that I couldn't do. And so that I'd hope I'd certainly see it as a mutual respect which is just part of that collegial thing....*

Novice to equal

The above quote illustrates how complicated it can be to deconstruct a mentoring relationship. A mentoree begins as a 'novice', that is in mode to receive benefit from the mentor. Age has no bearing on this stage which is demonstrated by the three older mentorees in the study, Jill and Mary in this record and Ed (Record 1C). The term also does not preclude experienced mentorees such as Ken (Record 3B), Carol, (Record 3C) and Jack who will be introduced in Record 4B.

The 'novice' can then become a 'colleague' or 'co-lateral peer' where both mentor and mentoree exchange knowledge and skills as needed with mutual respect. James mentioned that on the occasion of organising a national conference, he "just provided an administrative structure and a macro-view which has enabled people like Jill to do her stuff".

A relationship may grow toward 'equality' when there are certain commonly held attitudes such as those James discovered when being deliberately mentored by Isaac and those he professed to share with his three mentorees.

> *It is important to have a personality whereby there is an openness so people feel comfortable approaching you. Certainly that is something which Heather, Jill and I share. We don't have any problems at all ringing each other up and saying can you help me with something and know that the other might be able to help with it when they can. Isaac was certainly like that.*

Jill upheld this view in her statement, "I know always if I ring him up he will give me time. And that is a characteristic of a mentor. They will be prepared to put aside other things and help their people". Similar feelings were expressed by Mary and Heather. On the personal side, a sustained mentoring relationship often leads from mutual support to friendship which people in this web speak of quite freely.

> *I think we have all had a range of direction with each other and we can sort of talk personal matters and vice versa. I hope they have improved my self confidence as much I have improved theirs.*

An important observation is that professional advancement usually occurs sequentially, but in a long-term mentoring relationship it may move back and forth whenever new skills or opportunities develop for the mentoree. James described this vacillation:

> *As with Jill and I, it has been going on sort of in reverse with her being a mentor to me and the various roles we have had at different time and then back to where it is a collegial one.*

James ended his interview by reiterating the goal of the mentoring process - to encourage people "to be mentors of others." Jill continued her interview telling about her own beta mentoree, Gina, and in doing so revealed how the influence from her pivotal mentor was passed on.

Preparation for the 'cascade of influence'

Jill had returned to university for a masters degree in Social Science and began interacting with other university academics besides James. In particular, she spoke of learning ideas about the perceptions of place and how people feel about the landscape and teaching a new geography course called *Man and the Environment*. She tailored her study to environmental subjects and found that it gave her a 'sort of a fire' when she realised that the things she was doing in environmental education were being appreciated. It was during this time that Jill began working with her own mentoree.

> *That is when I was involved working with Gina and was starting to take these camps ... going up to Lindeman Island. I increasingly was then doing what I consider environmental education, and I had to go away and learn - the names of the tree and birds and rocks.*

The spark of interest

Jill had known Gina from when she was a student at secondary school. When her sister's class needed a chaperone for a fieldtrip, Jill remembered Gina as an outdoor type person and invited her along. Gina confirmed her interest in the environmental describing her own contextual background.

> *There has been a familial influence as far as sports and outdoor. There has been an education background as far as courses that I've taken and there has been my personal interest in the media and people that I've admired as far as environmental work is concerned. Jacques Cousteau has always been the most powerful one.*

As an adult, Gina had been involved on the fringes of the Geography Teachers' Association and was working at a university teaching outdoor education. She described the course as, "a marriage of outdoor skills and environmental education. I was taking people into the outdoors and organising expeditions and running fieldtrips. It was truly what I regarded as an integrated field study experience". This similarity of interest and renewed contact initiated the mentoring relationship between the younger woman and the teacher who was getting her further degree.

At the same time, Jill was also working on a draft of a new marine science education curriculum and asked Gina to field test some of the activities. She spoke of their complementarity.

> *Then we subsequently found that we were doing the same sort of work. So that next time I wanted to run a camp on the reef, I invited Gina to come as a supporter, because she was so physically capable of doing all the things that I lacked (swimmer, life saver, canoeist). The first time she just came, I realised how capable she was ... The next one I ran with her as one of my co-staff. We then got really close because we had this sort of funny relationship because I was older than she was, but I respected her very much for her skills and ability to cope and I think that she respected me for my organisational ability and my ability to pull in all these ideas and focus them for camps, which she really didn't often do.*

Gina left the university where she taught because of a philosophical difference with her administrator concerning the content for environmental education. She became the activities director on one of the Great Barrier Reef islands and tried to set up field studies for teachers there. She remembered, "That was my first big attempt at starting something after finishing my studies and it fell a little bit flat because of lack of experience. But Jill was there to help me out, to assist and she invited all these marine studies people to the island and tried to start something there". Jill described the relationship as 'cooperative friendship', a 'tit for tat relationship' where they both helped each other using their differing skills. Gina then began inviting Jill to her camps and commented:

> *I had people such as Jill to see the students while they were on the island ... as experts in the field. ... To give them integrated field experience I used activities that Jill and others had used. So what I thought I was presenting was a field studies experience which was really environmental education based.*

With Jill's influence Gina also became involved with the Marine Education Society and explained their joint work:

> *We worked together really well. She does have a lot of very exciting activities. She is tremendously creative and has been responsible for putting together what is now regarded as a textbook for Marine Studies and in Science. And I used the draft of Jill's work and it was just fantastic to have this material, because there was no one else around who had this sort of stuff to use for the marine studies work.*

Passing the torch - modelling techniques from the mentors

Just as James had been able to pass on new curriculum ideas to Jill, so too, Jill passed on her ideas and teaching style. Gina spoke of Jill's methodology.

> *She has tremendous PR skills; she is very approachable, she is so innovative, she gets everybody up and going. I saw her interacting with people and I thought this is fabulous ... this is a person whom I would like to emulate in the sorts of activities that I was running. So a lot of the things that Jill did, a lot of the procedures I just took*

> *those and used them, put some Gina into them and everything just worked out really well.*

Gina continued to pilot Jill's materials and stated that it was through Jill's experience and her contacts with other islands in the area that she started to branch out and visit different places. She recalled, "It definitely thrilled Jill that I had made those contacts". Jill demonstrated characteristics of effective mentoring - sharing network contacts, opening up new opportunities and taking pride in the mentoree's accomplishments. As the two women began to work more closely together, Gina noted:

> *We complemented each other really well when we worked together. I respected Jill's knowledge and experience and the fact that she could just do these things. She was lacking a little bit of confidence sometimes in the water work and that is where I felt very comfortable. And it balanced out very well. So Jill's experience in content and my combination of the water work and the skills just worked together.*

This recognition of complementarity, that is, accepting fully the special skills and knowledge that each person can bring to a situation, was another mentoring trait passed on from James and Jill to Jill and Gina.

Changing status in the relationship

When the relationship first began, Gina said that Jill was "definitely a mentor. I guess I would put her into the student/teacher role, I was the student, because she had so much experience and I was very green out of university". Yet, once Gina felt she had her feet on the ground and working in the island, she felt that the role had changed and commented, "I was in a situation where I was working and I invited her as an equal to come up and see the place that I had established". It is interesting to note that the move to 'equality' does not negate the mentor's influence as shown by Gina's comments:

> *Jill was still very much a mentor and adviser, the experienced one, the person that I looked to for guidance and assistance and whose opinion I valued very highly and her contacts and her professional acquaintances*

> *were the people that I was hoping to be involved with.- that circle of the professional field, the marine studies people, the marine educators, the biological based people.*

Disclosing the personal relationship

So far, this record has emphasised the professional alliance between the mentoring pairs, but developing in tandem with that was a close personal relationship. Gina revealed how the friendship with her mentor developed over the twenty year relationship.

> *We've always been friends. I've gone to her with my head hung low needing a shoulder to cry on and great personal problems. She's been much more than a mentor- a friend, a mother-figure sometimes. She's been an equal, a listener, a counsellor, she's been of tremendous assistance to me. She has moulded me greatly in the past and has been someone I could go to confidentially and trust and ask what do you think about this and that. Am I doing the right thing, the wrong thing on personal and professional and career level. She has been a very strong influence in my life.*

Gina's testimony to Jill mirrors sentiments disclosed by other mentorees, Ann (Record 3A), Liz (Record 3B), Pattyanne (Record 3C), and Diane (Record 4A1), for their respective mentors. Mentors who engage in both personal and professional sides of a relationship are deemed effective when they display characteristics of friendship, trust, the ability to listen, provide assistance, share networks and are deemed worthy of influence.

Continuing the philosophical debate

What makes the mentoring in this study significant is the tie to a philosophical base. There are constant references to a platform of beliefs, values, attitudes and actions about environmental education. This base helps sustain relationships over long periods even through difficulty as experienced by Liz and Ken (Record 3B) and James and Jill. Gina alluded to this bond when she stated that she and Jill had developed "a level of communication which doesn't have any barriers" as they continued to discuss their concept of environmental education:

> *... if Jill and I don't see each other for six months and then we call each other ... we can just talk straight away, there is no distance between us. ...We talked a lot about the future of marine studies, people in it, where it was going, what was happening in Australia, what was happening overseas, environmental issues, the island in particular. Our philosophies are very parallel and we don't have any conflict of any kind in a philosophical way.*

Relationships that only talk about the 'old times' may become static or die, but Jill and Gina represent a dynamic relationship that changes and grows. This ability to quickly pick up the threads of a relationship, bring it up to date and move into future possibilities is a hallmark of many of the mentoring stories in this study.

Reciprocity in the relationship

When Gina extended Jill's knowledge regarding the impact of water-based sports on the environment she felt, "it's adding to the situation and we can have more to discuss and we open each others eyes a little bit more". Not only has Gina seen growth in herself, but she noted the personal growth of her mentor:

> *She is still climbing up and I am still following her ... she has really grown ... I have seen her take on some tremendous consultancies and awesome jobs which I think is just fantastic. I'm still looking towards Jill; she is still up at a level that I respect and still hold in great admiration. There is no way that I would say that I'm on a parallel with her in her expertise and science. She really has a tremendous advantage in that.*

Gina brings out a salient point in that the mentor and mentoree may become equal on some footings, but not necessarily in all respects. This difference in knowledge base has been emphasised by several mentors including Glen (Record 1B), Dr. Gordon (Record 2A), Ernie (Record 3B) and James in this record. Because of this mutuality in their work, Jill expressed some surprise that Gina had nominated her as her mentor.

> *I am surprised that she holds me up as a mentor, because really it is a very equal relationship in that both of us give each other a lot of background ideas and so on. I've certainly learned a great deal from her ... I see her partially as my mentor in certain things.*

This same sentiment was expressed between Ed and Barb (Record 1C). Effective mentors are not interested in creating a clone, nor are they worried that the mentoree may become more knowledgeable and renowned than themselves which could cause an irreparable rupture in the relationship. These mentors are able to foster autonomous mentorees with whom they can maintain a sustained relationship which allows both the mentoree and the mentor to grow and sometimes for the relationship to become reciprocal.

Acknowledging the relationship

When asked if Gina had acknowledged this mentoring to Jill, Gina reflected, "I don't know that I've actually said it in those words, but she is very aware of the respect that I have for her and ... that I can talk to her about all these issues, personal, professional career wise". She went on to say:

> *I don't think I chose Jill as a mentor. Jill just happened to be someone that I related to and I found she had a magnetic quality. I thought this is a person whom I really want to talk to and speak to and be involved with, and she is in the area that I am very keen on. It sounded like the right thing to do. Because of the fact that we became friends ... it became a mentoring situation and we have continued this through for a long time.*

Gina brings out the important point in understanding the mentoring experiences of these participants. A professional alliance alone is not sufficient, the effective mentor must attend to the personal side of the relationship. When asked what she might say to Jill if she were present, Gina reflected:

> *I would tell her that she definitely is a mentor in my life and she has had a tremendous influence on the direction that my life has taken, the interests that I've had. She*

> *has really opened up a lot of doors for me. She has supported me and encouraged me and really helped me to reach the point where I am now professionally and personally.*

Readiness for becoming a mentor

Gina said that she will need a few more years of experience before she can give someone the help that Jill has given her. However, she acknowledged the benefits it might bring to her such as:

> *To me there is a personal satisfaction of passing on the knowledge you have picked up along the way which is going to be of benefit and help someone achieve something in the future ... To open the door for someone is the exciting thing and I look back and see the way that Jill has given me those steps and the sorts of things that I have been able to do with them, is really a reflection of that person herself.*

The characteristics that Gina would be looking for in a new mentoree included "a passion, an interest, a motivation, bright sparkling eyes that say I really want to do this and I'm really going to give it my one hundred percent enthusiasm". These characteristics are similar to those described by Heather as 'philosophical pheromones'.

Discussing the survey

In this study, only Gina and Jill discussed filling out the initial survey with each other. Although they talked about some of their responses, they did not reveal whom they would put down as a mentor. Two factors may account for this. Firstly, Gina, like many of the participants, recognised several important mentors in her life and took time to decide between two people. Secondly, people are often not asked to explain their mentoring relationships and need time to reflect. Jill remarked that she hadn't thought of a mentor very much at all, yet said that she recognised it when asked.

> *When I sat down and started reading through your questionnaire, I thought, yes you know, she is on to something ... so I began to think about how much*

> *influence you get from other people. But there is a difference between just influence and mentors.*

Jill told Gina that she had already put someone down as her mentor, and commented that it was an interesting experience for her and she had come through a crisis. Gina thought, that with all of Jill's diverse interests, it would have been very interesting to know the person who had been Jill's mentor and to meet that person. She further commented about the process of being involved in the questionnaire and the interview:

> *Mentoring is a tremendously valuable thing in a person's life and their career even if people don't realise it as they are going thorough it and it is happening to them. By answering this questionnaire, it has given me a greater appreciation of what these people have done and have given to me. It came to me while I was filling it out, my goodness, look what these people have done for me. Look at what Jill has opened as far as doors and contacts. I started to realise that this is what the relationship between her and me has created. I went back through it and looked at the various steps and I looked at my own personal growth and I looked at how things have become a moulding situation in my life, as well. And I realised how incredibly important mentoring has been for me.*

Gina wasn't sure if Jill had other mentorees than herself, but she well understood the efficacy of the relationship for herself as she summarised her feelings for the future and how mentoring can contribute.

> *I look back and think, 'Thank you , Jill, for being there ... for being a mentor' and I just have to do something about it. It's just so incredibly powerful for me now. They have lit the fire in the belly. If I can do that for someone else through a mentoring program ...*

Gina's optimism about what mentoring can do for other people is grounded in examples from her personal and professional relationship with her mentor. At the same time, she has developed further her philosophical stance and acted as an environmental leader in her own right.

5.4.2.4 Summary of Record 4A

To understand just whom one picks as one's most significant mentor for environmental education and why that person is so influential both personally and professionally was an aim of this study. Record 4A has discussed a web of people who may know of each other peripherally, but have not revealed the process and effectiveness of their own mentoring to each other. Yet, by looking at the three strands of the mentoring web some commonalities become apparent.

Contextual backgrounds have been described to show where and how the participants developed a sense of environmental awareness. Some had childhood memories which initiated them into a love of the outdoors. For some, school experiences, especially fieldtrips, were important even though they emphasised nature study rather than issues that today are considered part of environmental education. James was an exception to those interested in the outdoors, coming to an environmental awareness through political and social justice issues discussed at home.

Several issues have been highlighted in each record which emphasise the philosophical underpinnings of the mentors and mentorees. All of the participants developed their ethical stance towards the goals of environmental education in different manners. Heather had university courses while in England, Mary travelled in Asia and later became sensitive to local problems, Jill partook of philosophical discussion and political action regarding war, nuclear power and Australian environmental issues. The supra mentor, prime mentor and alpha mentorees had a special interest in geography studies, whereas the beta mentorees had more diverse backgrounds. Gina's interests evolved more from an outdoor recreation aspect, while Diane and Winifred came from natural resource backgrounds.

The move towards action was influenced in one way or another by the respective mentors. Isaac, the supra mentor, deliberately mentored James and passed on the idea of cultivating someone to take your place. James was perceived as a mentor by three different people - Mary, conservative and practical who came slowly to environmental awareness; Heather, moderate in her actions, but steeped in ethics and theory; Jill, not afraid to move beyond theory to controversial action. All found something different, but effective, in their mentoring relationships with the pivotal mentor.

James offered opportunities to his mentorees to speak, to run workshops, to write and to work on projects which broadened their horizons and opened pathways to leadership. When two of the alpha mentorees took up the mantle of mentoring, they passed on a simiiar kind of influence, availability, friendship, support, increased networking and encouragement for environmental education action.

All of the alpha mentorees, plus one beta mentoree decided on career transitions during the time that they were involved with their mentor. Opportunity to broaden their horizons and hone their skills were offered by the mentor prior to the decision, while personal encouragement and professional support were important during the change. Colleagial working relationships resulted after the career transition.

Two other important issues have been brought out in Web 4A. Firstly, a door has been opened for women into the male enclave of environmental educators. Not only are men mentoring more women, but women to women mentoring is being valued. Secondly, one does not have to be a young protégé at the beginning of one's career to establish a mentoring relationship with an older, wiser mentor. The mentor can appear at any age, at any stage of a career and when one is at different stages of philosophical development. The mentoree can be older and well established in their career, yet open to philosophical development like Mary; she can be older and fairly new in a career, yet philosophically inquisitive like Jill; or, she can be a younger practitioner but one who is firmly aware of her environmental education beliefs like Heather. If there is a spark of interest and a follow through by either the mentor, the mentoree or both, a professional alliance has a chance to develop along with deepening personal ties. Examples, such as those presented in this web, can encourage other environmental educators to reflect and verbalise about their perceived, acknowledged and deliberate relationships, thereby revealing the process and opening more mentoring doors for future leaders.

5.4.3 Record 4B

Whereas, Record 4A examined a web of people primarily interested in a geographical approach to environmental education, the participants in Record 4B come from an environmental science orientation. Four records will illustrate the perceived mentoring by a supra mentor, acknowledged mentoring by the pivotal mentor, and deliberate mentoring of two new beta mentorees. These relationships are shown in *Figure 5.9*. As in Record 4A, the three alpha mentorees may have known each other through various networks, but they each identified the pivotal mentor separately. Brad, is an environmental education publisher, Dave is an academic who worked with Jack over the years, while Sue is a free lance consultant. Whereas Record 4A had two older

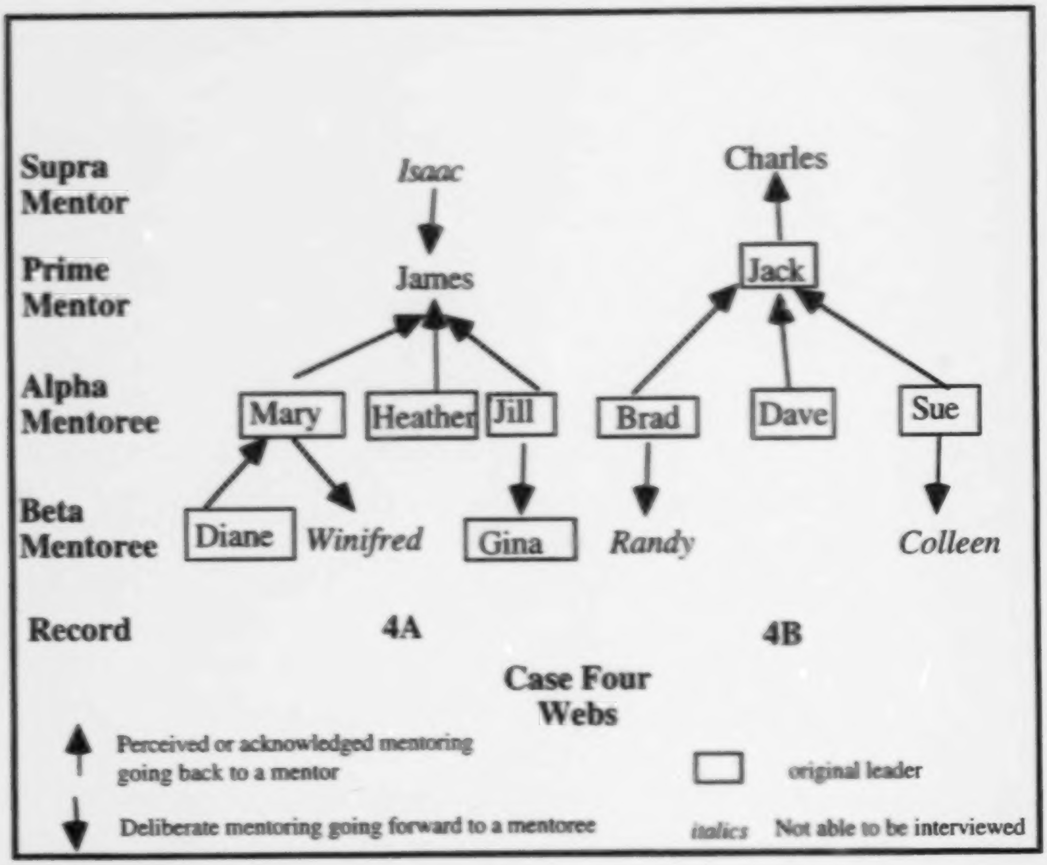

Supra Mentor
Prime Mentor
Alpha Mentoree
Beta Mentoree
Record
Isaac
James
Mary
Heather
Jill
Diane
Winifred
Gina
4A
Charles
Jack
Brad
Dave
Sue
Randy
Colleen
4B
Case Four Webs
Perceived or acknowledged mentoring going back to a mentor
Deliberate mentoring going forward to a mentoree
original leader
italics Not able to be interviewed

Figure 5.9 The participants in Case Four Webs 4A and 4B.

mentorees and a younger mentor, most of the people in this web, are fairly contemporary in age, except for the beta mentorees who are younger. They all share a strong background in science which is apparent in their activities relating to environmental education.

5.4.3.1 Record 4B1 Charles, Jack and Dave

Childhood pursuits carry through

Charles, like many of the participants in this study, grew up in an Australian country town and spent time on the rocky shores and wandered through the bush. His parents did not discourage his naturalist activities such as collecting butterflies and preserving snakes. Like Carol (Record 3C), he followed up his interest with research saying, "snakes - you caught them and looked at them and that meant that you got hold of books and you read and went and visited people". Charles tells of a primary headmaster when he was in grade six who told him that one day he would be a zoologist. At the time Charles did not even know what the word meant but he recollected his childhood awareness of the environment.

> *In many ways my background was in isolation except that when I was young lad I met a naturalist who had an interest in snakes ... In retrospect I know now that what he did was to respond to the fact that I really didn't know how to look after myself around snakes ... He took it upon himself to continue to encourage me to develop my hobby, but he made it a point of teaching me survival issues in terms of handling snakes. We never went on fieldtrips together, or anything like that, but it was a very, sort of superficial interaction, except that I know that he underpinned me in a way that was very necessary. He gave me a small book on snake identification that started me on the way of reading a little bit about the dangers of snakes. But, in terms of sitting down and giving me guidance or taking me into the field with him and showing me - there was not much of that.*

That naturalist was an important influence in his life, but Charles did not identify him nor anyone else as a mentor. This is similar to the story of Robert in 3C who had a special relationship with the butterfly scientist in childhood, yet when naming his mentor, picked Grant, someone much more pivotal to his involvement with environmental education. Like Robert, Charles reflected that some things obviously happened in his early life that opened his awareness to natural history issues and "those things carried through."

The supra mentor's academic training and early career

Charles ended up doing a degree in physics and mathematics because the education department that was paying for his university tuition would not accept his pursuing a zoological career. Even while he was teaching physical science, he continued his hobby and recalled, "because of my interest in natural history, I used to be out whenever I had free time, spotlighting, searching for reptiles in the area where I was teaching in the Atherton Tablelands. Actually, I saw myself juggling my transfers to teach my way around Queensland to look at the wildlife, particularly reptiles". This view toward natural science began to spill over into his teaching.

One incident in Charles's early career replicates a theme expressed in this thesis by most of the teachers. He is determined in his commitment to field experience, yet experiences resistance within the educational system. Similar patterns are found in the stories of Ed (Record 1C), Pattyanne (Record 3C) and Jill (Record 4A). In one particular high school, Charles had developed a program of work using the creek which ran through the school grounds for a grade nine series of lessons on freshwater ecology. The other teachers were interested and, since they had no biological training, they copied his methods. One day when the inspector came to check his teaching, he put the blackboard and easel down beside the creek to conduct the class. According to Charles, the inspector said, "I want to see you teaching, you will be in the classroom". Charles responded, "that really stuck with me, it said there was a need to change the perception of what really constituted teaching in relation to biology".

A career transition to university teaching

When he went back to university to pursue another degree in biology, Charles observed that almost everything he studied except the microscopic things, he had already learned through in his private wanderings. This same kind of self-taught knowledge was also identified in the autobiographies of Bob and John (Record 1A), Paul and Aldo (Record 3A) and Carol and Robert (Record 3C). Charles then moved from teaching at a secondary school to a teacher's training college and ended up doing a master's degree studying sea snake toxicology.

> *I went to the college convinced that we had to upgrade environmental education and get it out of the classroom and into environmental situations. That was a given that I brought to the college with me, a very strong attitude.*

Charles found that people were coming out of the university with little idea of ecosystem functions and in particular had a paucity of knowledge about the Australian environment. He stated:

> *I was almost appalled that these people were coming from the university with virtually no understanding at that point in time of the Australian wildlife. The biology teaching that was going on in those days was the classical European, North American textbook type stuff. They knew lots about rats and toads, but when it came to the Australian wildlife, unless they had a hobby that took them bush, they didn't have a clue. Many of our teachers were coming through as city-based kids who had gone to university and were going out and they couldn't identify the wildlife around them.*

To bridge this gap, Charles started a series of fieldtrips to local areas and his purpose was to train teachers who would be able to use the wildlife that was around them as part of their teaching. He noted the progress of this endeavour saying, "It proved to be a very successful field program. It changed the outlook of a lot of teachers. I had a lot of contact with students who when they became teachers started actively organising their own fieldwork".

Meeting his mentoree

It is about this time when Jack also a made a switch from being a high school biology teacher to a career in academia. Jack had initially commenced training as a medical doctor where he developed his attitude about the importance of looking after living things. He had always been an advocate of practical work and said, "But it wasn't really until I got onto the teaching career that my main emphasis was focused on field studies, and particularly biology".

There was little difference in age between the two and Charles had only been at the teacher's college a few years longer. Charles described the person who perceived him as a mentor.

> *Jack was young in this particular field of environmental education, but he was enthusiastic and prepared to try. He had a reasonably inventive or problem solving approach to things ... I think it comes down to being able to think laterally. He came across as a person who was able to make it work.*

A study of Charles reveals several important aspects characteristic of a mentoring pair. Mentorees can be 'novices' at different times in their lives. No matter their age, as long as they are willing to learn from the mentor, this experience can enhance their professional alliance.

Development of the relationship

Concurrent with the developing mentoring relationship, Jack reported his own growing interest in field work and credited the outings with different groups like the Fraser Island Defenders Organisation and the Wildlife Society. He noted, "being a member of conservation organisations really brought me to understand the importance of utilising the field as well as actually teaching the theory part of it".

Jack perceived Charles as his mentor and cited as reasons their common biological backgrounds, their work at Mt. Glorious and their mutual care for the environment.

> *Obviously when you look into him, Charles has always been interested in living things pretty much from the*

> *word go. He had, not only this knowledge of the area, but also great appreciation and love for it. These are the sorts of things that I felt the same way about and you could see that this is the way in which you will have to get it across to people if you are going to understand. This is the reason why you should know something about the environment and care for it.*

Jack characterised the environmental attitude espoused by Charles as encouraging people "to get wrapped up in it". Jack looked at Charles's programs in the Mt. Glorious rainforest and the coastal sand dunes and then developed his own student program centred on marine fieldwork. Jack stressed why he felt this exposure was so important.

> *You can see, when they go to these areas, they learn a lot more about it and their ideas of conserving that particular environment becomes greatly strengthened. A lot of them have read about it, but this really clinches it when you get them out in the field and they really see it and learn something about it at the same time, it really clicks. It is important that we do something about people and the environment.*

Charles remembered Jack's very successful program running at Stradbroke Island and said that he had participated in a couple of his fieldtrips there to see how they worked and found them quite worthwhile. He commented on the effect Jack's work had in the department.

> *So we had for a while there three quite significant programs for taking the students out of the classroom and putting them into thought provoking situations.*

The personal relationship

When asked about the personal relationship with Jack at this time, Charles mentioned that, although they were busy running their own courses, they often spent time socialising within the context of the college. Both were busy with their master's programs and any spare time was spent on research. Charles remarked, "so I know I wasn't particularly a social animal in those days because I spent nearly all of my weekends in the lab at the Uni". Jack disclosed that " the only close relationship I had with Charles was when I had some students. He was always appreciative that I would send them around and he would show them this and show them that. He was always available to talk to the students in a lecture". However, the two men both said that they had a chance to develop more insight into one another when they got away on fieldtrips together. Charles reflected:

> *I felt that we got on well together and had good rapport. Some people you can work with as part of a team and sort of know that they will function well no matter what happens and you are not worried about the decisions they will make ... When you have that sort of confidence it is easy to relax with people and share ideas.*

Philosophical underpinnings

When asked if the two discussed the philosophical underpinning of their approach to environmental education, Charles felt that they had, especially in designing new programs of work which they constantly changed to incorporate new student exercises. He emphasised, "We certainly talked a lot about the philosophy behind what we were doing and why. That didn't necessarily happen at the camps. A lot of that would happen over lunch and around the staffroom tables". Charles spent six years at the teacher's college and felt that he had been able "to shift the awareness of the senior staff to an acceptance that teaching outside the classroom was a valid teaching exercise".

A change in position, but not in influence

About this time Charles made another career transition moving to the Parks and Wildlife Service and stated, "I saw that we had a role to play in increasing the environmental education capacity in our department's work". He began work to show how schools that couldn't take fieldtrips could develop outdoor classrooms. He recalled, "we ran some programs with school principals about how you could manipulate the planting of trees in school grounds that would cover the diversity of the curricula in primary school biology teaching".

Charles eventually transferred to another government department where he continued to carry on the turtle research he had begun at the college and invited students to participate. He said he had always been heavily influenced by his own experiences of teaching and advocated that students should have "the opportunity to participate in the research programs that people are doing and get some feel for what the science is about". He commented that in the seventies people treated his views "as a bit of an eccentricity". This scientific view contrasts with James's method (Record 4A) of introducing students to the political reality of environmental issues from a theoretical rather than practical approach.

Extending the realm of influence for environmental education

Charles was even able to create a volunteer participation program for crocodile research in an area he described as, "stinking lousy country up west of the Atherton Tableland on the headwaters of the Gulf rivers. I have no problems in having volunteers to participate. It comes down very much to an attitude of how you deal with them".

Charles felt that "if we can't get the public interested in looking after the environment, we are wasting our time". He described three levels of environmental education for people who get involved with his internationally renown research on turtles.

> *We've got the special students who come in to do post graduate work with us and they are going to go off and become scientists and leaders in their own right ... They will give us a lot of direction in the future. We've got the volunteers who work with us and they get an above average exposure to sea turtle and turtle conservation issues. And they are they sort of people who when something happens locally in their district they are writing letters to the minister, they are the proactive, educated people. But then there is the general public and we have thirty-five thousand tourists a year come through ... They are the voting public. They don't necessarily have to understand all the ins and out, but if they have a good gut feeling that it's nice to have these things around and we want to keep the environment enjoyable, then they are the people who will determine what sort of politicians are going to be in-there and influencing what we are doing.*

Keeping attuned philosophically

It is this attitude of how to communicate environmental science concepts to students, volunteers and the wider community which keeps Jack in contact with his supra mentor even now. Charles described his approach:

> *I start with the goal that these people are going to enjcy themselves. As a teacher, you have to be available to spend time talking about a whole range of background information - the whys and the wherefore, the biology of the animal, encouraging students to take on post-graduate work of their own, even if it is not in with your field of work, helping them to see beyond where they are. To deal with the housewife that comes along as a volunteer to have them sort of see that there is a role for them in the environmental issues of our society.*

Both mentor and mentoree agree that if environmental education is to be useful for understanding issues, sound scientific information is a prerequisite for informed decision making.

The effectiveness of a perceived mentoring relationship

Because Charles felt that he had had a more conscious mentoring relationship with several students who have been through his department, he was a bit surprised to learn that someone so close to his own age perceived him as a mentor. Yet when he described these other mentorees as self-starters, having a goal they want to achieve, lateral thinkers and "keen to broaden their understanding of what the system is about", it sounded like a description of the young Jack. When this was pointed out, Charles replied:

> *I probably wasn't having a tick list that I sort of said here is a person whose got it, let's deal with it. It was a case of Jack being one of the few staff that I had to interact with at the college that those things just stood out and he was there doing it, along side me.*

When asked if they are still in contact, Charles stated:

> *Not really, we have sort of headed off in different directions. I've been out of town until lately. I've spoken with him on the phone a few times and we have crossed tracks a couple of times ... there is catching up in terms of what have you done recently. But there is still a rapport there.*

Charles summarised his relationship with Jack saying that although they do not communicate regularly, he did not see that as necessarily negative and they keep up through mutual friends, much the same way that Heather and James do (Record 4A2). Most importantly, out of all the people that Charles worked with at the college only three staff members stick out and Jack is definitely one of them.

Although Charles did not benefit from having a personal relationship and a professional alliance with a mentor, he did recognise the process and has been involved with it in a more acknowledged ways with others. When confronted with the acknowledged mentoring of Jack, he was able to describe easily the spark of interest, the development and the sustainment of the relationship on both personal and professional levels. The effectiveness of the relationship is seen through the benefits Jack felt he received from his mentor. When Jack was asked what he might say to Charles about the relationship if he were present, Jack replied:

> *He has had a lot of importance, first of all, knowing something about the environment. He's gone that step further in that he is a research worker and has extended his subject to his turtle research. He hasn't pulled any punches with his work, he always has something going all the time. And that's the sort of thing that I would like to be doing ... you just don't stop and say, look I have a rainforest down here, isn't that great. Then the next thing you say, is there is something else to do, but always carrying on with the environmental education philosophy.*

When Jack specifically nominated Charles as a mentor on his initial leadership survey, he stated that the relationship extended over twenty odd years and wrote that the impetus for the mentoring was based on Charles's knowledge of and caring for the environment, as well as being one who practices what he preaches. Jack recorded that Charles had substantially influenced him and his career and remarked that this status had not diminished over time because he "still remains a dynamic proponent of the environment" and "he hasn't been afraid to share his techniques".

Jack modelled some of his supra mentor's techniques, but created many of his own as he gained prominence for a 'rainforest garden' established on the college grounds. His influence in dealing with environmental education is revealed by Dave, another beginning academic, who nominated Jack as his mentor.

Dave, the alpha mentoree

It is important to understand what in Dave's background made him so attuned to Jack? Like Charles, Dave had a very outdoor-type of childhood and recalled, "as a kid in a country town you were just never home, you were always down the creek catching tadpoles or chasing fish or catching yabbies or freshwater crayfish".

As a university student, Dave first studied physics but, like Charles, he saw little relevance in it. When he went back for an education degree his early interest in nature was revived and he took some zoology courses. It was this formal introduction by two memorable professors that began his involvement with environmental education.

> *They influenced me a lot, not so much in their lectures, but they actually took us out into the field ... I was intrigued because these fellows could identify seven or eight different birds all calling at once and have a debate about the fourth or fifth one. That really got to me, I thought these fellows really have an understanding of the environment. They can go into any environment, they can apply all their principles of ecology to the environment, and they can make some sort of sense of it. That really impressed me. I guess that is where my interest in environmental education first started up.*

Dave had a ten year stint as a biology teacher in a secondary school where he introduced fieldwork "which made kids realise that there was a lot to know about the environment", but he reflected, "I look back on some of the biology that I taught and I don't think I really capitalised on the situation". This remark is reminiscent of Brad's who understood the difference between teaching biology and teaching environmental education as an issue related subject. It also takes in the criticism levied at science educators by the geography trained educators in Record 4A.

Meeting the pivotal mentor

Dave was a seasoned teacher when he moved into academia at the same teacher's college as Jack. He lectured mostly in biology and got heavily involved in fieldwork. Dave gave his first impressions of this person, only five years older than himself, who would become his acknowledged mentor.

> *Jack is one of these people who just has an incredible knowledge and can go from any ecosystem, from reef right through to rainforest, and he will give you a very good understanding of those systems.*

Jack commented that he had tried to put across as much information as he could to people and "just deliver as much as you can to encourage them about the importance of the environment". Dave recognised his mentor's expert knowledge base.

> *It very quickly became apparent to me that as soon as we went on any sort of fieldtrip, Jack was the bloke with the knowledge and he was willing to share that knowledge. He didn't sort of shove it at you, it was just there ... It was this quiet, unassuming way that he was able to go into an environment, talk about the environment ... be able to weigh up different sides of issues and talk sensibly about those sorts of issues. That left a quiet, but marked impression on me professionally.*

The personal relationship and the professional alliance

Dave said that he shared a personal relationship with Jack as well as working together professionally. Like others reported in this study, it deepened when they were out on fieldtrips together.

> *I guess I was really fortunate in that it was a close relationship to start off with. We thought about the same sort of things, we lectured in the same room, we were on the same fieldtrips, so everything was sort of there for us to work easily together.*

Jack always appreciated Dave's strengths and Dave remarked that he had some expertise that Jack didn't. Jack's demonstrated his effectiveness as a mentor by allowing the mentoree his own growth. Dave responded to this.

> *Once Jack knows the sort of area you are interested in, he will sort of back off ... That may not have been a conscious decision, but that is just the way we evolved ... He feels that is your area, so it is reciprocal. He respects your knowledge at the same time having it all himself.*

Dave disclosed that Jack acknowledged his expertise to others and that made the relationship "a very happy combination". When Dave would suggest a method of getting something across better, Jack listened because his mentoree "had something of value there ... I'd be prepared to follow some of the tactics that Dave supplied to me, because I feel that is another way of doing it and we'll capture more audience that way".

Their relationship got to the stage where Dave worried that he might be exploiting Jack's knowledge, "because he is a very quiet, unassuming bloke". Dave began to organise "EXPEQ" tours to show students teachers and people from the community the environments of southeast Queensland. Dave formed the team and organised the field studies, but said he and Jack would discuss environmental issues associated with those areas.

> *I think ... it is the most natural evolution in a group, who is going to do what? I don't mind organising things and I didn't mind using other people's expertise. I'm quite happy going into a situation saying I don't have the expertise, but let's use your expertise. I enjoy that because I learn. That has been one of the great benefits of working with someone like Jack and Bernie and Tony, because they understand my expertise.*

Using one another's expertise in a cooperative manner shows a working relationship reminiscent of James and Heather's idea of 'shared leadership'. That leadership is tied to environmental education and, according to Dave, is something that impinges on us all the time - "It is not a hat you put on and take off - and that without a defined philosophical belief you have nothing to fall back on". He reasoned:

> *It is very easy to get on a band wagon and it is very easy to overdramatise the situation. We can make a lot of nasty pollution and plastic bags, always this sort of thing ... If you can't go back and analyse those different things and look at them from first principles, which I believe is your philosophical position, then I don't think you should be in environmental education. Otherwise you just simply run with the mob.*

Physical distance, but mental closeness

Of late, Jack and Dave have been pulled apart by an amalgamation when the teachers' college became a new university. Jack moved to the biological science department, while Dave opted to stay with science education. Dave doesn't feel that their relationship has diminished and explained their method of communication called 'short cuts' espoused by Davidson (in Kent, 1991).

> *The closer the people are the less guessing has to take place to understand what is being talked about. As far as Jack and I are concerned, there has been little guessing about things environmental. We have listened to each other, talked to people, sat in on each others session and listened for twenty years now. Over the years we have built up detailed knowledge of each other.*

There is a mutuality in the relationship and if questions on educational theory come up, Jack does not hesitate to ask Dave. Although this mentoring was "certainly accidental and informal", Dave felt it evolved in a natural way. Dave detailed what he thought has made Jack an effective mentor.

> *This is where Jack has got those characteristics - unassuming, he has this tremendous knowledge, he has*

> *very strong views about the environment, he puts his money where is mouth is, he is not frightened of doing the work himself, so before he takes someone into an environment, for example, he will visit the area himself, not just a photograph. He's like a little terrier, he sort of gets it and shakes the hell out of it, he won't let it go until he understands it and then he will take people in. That is the sort of attitude you want in a leader.*

On hearing that Dave acknowledged him as his mentor, Jack responded, "I must have done something along those lines, if he mentioned that". Dave explained several factors which accounts for the mentoring affinity between them: it is tied to a certain personality factor, plus the knowledge base, a combination that someone has something that you want, and they can describe it the way it suits you. He admitted:

> *I wouldn't say Jack ever consciously set himself up as a mentor. So his mentoring ability was almost coincidental. This was just part of his make up. He was willing to share and if you were wiling to take note of him, then he was an excellent mentor.*

Jack said that they had worked together for many years and even produced books together and reflected, "so the contact has always been there and also the discussion and perhaps the philosophical emphasis that comes out of that".

Willingness to becoming a mentor

Dave did not nominate any new mentorees that he might have been directly encouraging as far as environmental education, but he stated, "So in terms of mentoring, I don't think I set myself up consciously as a mentor, but yet I am very happy to share ideas and to listen to other people. I think that is where the mentoring has come in - these sort of shared experiences". It is these shared moments of environmental knowledge, attitudes and values that Jack's second mentoree, Brad, explained was the basis for his relationship with this same pivotal mentor.

5.4.3.2 Record 4B 2 Jack, Brad and *Randy*

Jack was acknowledged as a mentor for Brad, a teacher who connected both personally and professionally with his methods. In order to understand this link, it is necessary to know a bit about Brad's autobiographical background and how his awareness of the environment was stimulated during childhood.

> *I suppose I started early on. My parents had a holiday home up at Alexandra Headland and during the weekend they would take me up with them. I spent many, many long hours in the surf. Then I use to walk over the rock and looked at the animals. I was fascinated just to look at the animals and see what they were doing. But I think it was the freedom that the surf gave me and the feeling I had for the water that made me want to be a marine biologist ... I suppose that interest in environment, not education, but just the world, the sea would have started when I was about eight.*

Like a few of the other participants, Brad found a special high school teacher who extended his informal knowledge.

> *When I got to grade eleven, I met a guy who had a passion for teaching zoology. The old story of the teacher who has changed your entire life - I struck one. In the early days it was a bit like marine studies. I saw the guy sit up every night and type up his notes and then he would run them off ... and he would give a lecture and we would copy down the notes. I was really impressed with this guy. I thought he was a dedicated bloke and he knows his stuff and he cares about it and there is no book.*

Brad finished university hoping for a job in marine biology, but with the realities of a young family he finally became a teacher. He noted that there still was no textbook for marine studies, so he copied the style of his teacher using self-written notes.

Connecting with the pivotal mentor

To enhance his biology teaching methods, Brad held a seminar at his school and invited a couple of people he had heard about through the Science Teachers conference. During that first meeting with Jack, Brad was impressed by his techniques. He recalled:

> *They took us out in a boat and had a plankton haul, they collected a sample of water and showed how we could analyse water with the students. In other words, they showed me the things that I could do to become a really good teacher. I think, that was the mentoring I got the most from Jack ... I guess all I needed was a bit of a lead and I just ran with it.*

This ability to take an idea and extend it was one of the things which attracted the two to each other. Brad described Jack's disposition disclosing, "There is a certain personality to Jack, too, that he doesn't work too fast, but what he does work on is very thorough and that has taught me something, too. If you are going into something, go in to do it properly and follow it all the way through". Jack remarked on his view of this beginning relationship:

> *Whenever I have been in contact with Brad, I have always tried to put across the best of the ideas of the situation at that particular time. He was a teacher ... we all had our own ideas ... Brad is very good in that he was always prepared to learn and from then on go the one step further and try to do it better or find other ways of doing it. Also finding simpler ways of doing it, particularly because he was looking at the student aspect and not so much at tertiary or work level....*

Again, we hear the mentor acknowledging the difference between himself and his mentoree and allowing each of them to keep their own ideas and proceed in their individual manners. Jack characterised Brad as both follower who would ask for help from his mentor and a leader who, "if he started to do something, he'd get around it the best way he could and extend it a bit further". Later on, when Brad began writing environmental curriculum books, Jack allowed him to use his idea for water sampling bottles and helped him edit the content. Brad appreciated this and stated:

> *I think that is why Jack's did it. The fact that I was able to publish his ideas and get acceptance of many, many other people. He probably got a buzz. And I was able to give to other people the meaningful experiences that I have had and they, too, were able to look good with their students and their peers. It made the job worthwhile, instead of drudgery, with no self-recognition and low-self-esteem.*

Jack felt that even when he picked up technical faults in Brad's writing, "he very quickly cleaned it up and got his act together". Jack was pleased with Brad's results and the spinoff effect knowing that his own techniques would be more widely disseminated. He even allowed Brad to reproduce drawings from his own publications. Brad remarked:

> *I kept saying how much do you want for these. Jack would answer, 'It's all right, Brad'. It was the freedom ... he trusted me not to use him ... to always acknowledge him, to do the right thing with the knowledge that he had shared. What is the right thing - to support the cause of environmental education to make education more relevant for kids. But in return, he now has a textbook that he can give to his students ... I had given to Jack the ammo to promote his course ... that has been my gift to him in return. It is a business, but with no money.*

The idea of 'business with no money' is an unique way to see mentoring. But effective mentoring, as has been seen in this study, usually has a personal side to the relationship. Brad addressed this issue, saying that he didn't see his mentor a lot, but they worked on a seven year project together and remarked, " Jack was on the project team, so we obviously got a chance to socialise and talk and we shared a common interest in plankton".

Move to Private Business

While still teaching, Brad began to hone the marketing skills he would need later. He ran a successful school program which raised money for boats to take students on fieldtrips so they could learn about the local environment. Like Ed (Record 1C), Ann (Record 3A), Pattyanne (Record 3C), Jill and Mary (Record 4A), Jack and Charles (Record 4B), Brad faced impediments from his administration, but felt he assuaged them.

> *I thought the reef trip that I used to run was the highlight of the course. You have enormous constraints in secondary education and marine studies allowed me to get out once a week, legitimately, into the environment and do things.*

Brad broadened his teaching to include social issues and he was sensitive of the name change from biology, zoology or environmental science to the new 'environmental education'. He felt it was beneficial because "with the change and a lot more people doing it. I think a lot of issues emerged that I had never thought about". He credited the visit of Bill Stapp to Australia for introducing the idea of catchment management and says, "That is when I started to think about the relationship between the land and the sea and how important it was to tell students about that".

Brad moved out of teaching to start his own business and was encouraged through a small grant to publish his original marine studies notes. He published not only his own work, but that of peers he had known who had supported him in his early endeavours. Although Brad stated that more than one mentor might be needed for various aspects of one's work, he chose Jack as his mentor for environmental education. Brad felt that an effective characteristic of a mentor is someone who was willing to say, "come on down, I will show you how to do something". He distinguished mentoring from the help you might receive on a network in the following way:

> *It is the help that mentors give you. Some people you ring up and talk to are not going to tell you anything, because of the fact that they don't trust you. So trust is the number one key ... A mentor should evaluate the person that they are obviously going to help, but then open up and tell them everything from dot to go.*

When discussing how his philosophy might have changed with the move to his current position as a private publisher of environmental materials, Brad explained that he has started to deal with local government, the Surf Rider Foundation and ordinary citizens.

> *Philosophy has a lot to do with it, but I think that now I work in a compromise situation and the philosophical belief has got to be tempered. How far you are prepared to compromise that is where your philosophy keeps you in touch ... However, I have faith in the general awareness of environmental issues. It is the number of people who are saying that we need to care for our coast or our sea or our land. It is also the empowerment that groups of people have ... They can change things.*

The evolving relationship

Brad described the change in his relationship with Jack humorously, "It is a function of age. You lose your hair together". Although they do not surf together as Brad still does at age forty-four, they have 'just been good friends". One of the things that Brad still appreciates is Jack asking him to lecture for his university classes. This is a similar sense of satisfaction as that expressed by Sally (Record 2B) and by Mary, Heather and Jill (Record 4A).

Brad has changed in his professional status from a novice to a co-lateral peer now that he has moved to private business and Jack is in academia. He explained the transition this way:

> *Publishing. In other words, the power of writing gains respect that is unprecedented. As soon as you put it on paper and you have your name associated with it, that changes people's attitudes.*

Jack remarked on the progress of his mentoree over the twenty year relationship.

> *Brad is a very good example of someone who has now gone ahead and done the things that I really wanted to do. And it is good to see that you have encouraged*

> *someone to go that step further ... He has turned around and really honed in on marine studies. He has said this is the way to go and then said the only way to do it to get kids interested is to bring a course of marine studies in. He has also produced the books, the goods, and so on. He has skyrocketed ahead.*

Like Jill and Gina (Record 4A3), Brad's current interest is marine education and his business publishes materials which helps promote this.

Deliberate mentoring - the 'cascade of influence'

Brad is just beginning to mentor a young man named Randy whom he met through the Marine Educator's network. Although the researcher had phone contact with Randy, a full interview was not able to be held. However, Brad described his beta mentoree.

> *Randy wanted to be a consultant, desperately wanted to leave teaching and then he got into a field study centre. I haven't seen him for years ... So Randy wrote to me last year to stay with me for the MESA conference ... He couldn't come up because he just didn't' have the money. I'm in a financial position to offer him airfare ... I'll show him that I trust him implicitly.*

Brad's comments brings out the importance of establishing a rapport with the mentoree. The 'spark of interest' can be noted quite quickly, even though it might not be feasible to follow it up immediately. Encouragement and trust are needed to develop the relationship. Brad analysed the situation.

> *You are sussing out who you can work with. There must be something about our personalities that is similar. He's written and I've written. I trust this guy now. I can work with this guy, so that I am going to share with him all my inner secrets, because I know he will be a fabulous consultant for me and we will do some good things together.*

Like many of the mentors before him, Brad is not looking at this relationship as one which will create a clone. He recognised Randy's strengths as being different from his own yet complimentary.

> *In some ways he is better than me - as a creative author with some of the things that he has done. What I've got, is I have it all together in the business end ... he wants to work from home and do all the things that I've done. I'm going to help him do that ... we may become good, healthy competitors, otherwise you don't get any relationship at all. But then again, I might say 'good luck to you, I got equally from you what you got from me in that I trust you.'*

Brad pointed out that what he was really being asked was "something about human nature". He saw mentoring as a way to 'knock the tall-poppy syndrome' where people who seem to be succeeding beyond their peers are discouraged. By acting on his beliefs and financially sponsoring various groups to develop their own environmental materials, Brad hoped that during these interactions, someone might find a mentor. He argued:

> *The big thing is to totally obliterate this 'tall poppy' thing and encourage people to promote themselves in an Australian way. So we have to find our own way. I've been trying to search for it, but I don't think I have really found it. I always try to be positive ... Just go out for a beer with them and say, 'Go for it!'. That is what I constantly tell people who write to me. I can see that they are thirsting, they just want a bit of encouragement.*

Coming full circle

Brad disclosed that the first time that he met Jack, he was impressed with the fact that he came up to his school, shared his knowledge and didn't mind someone else using it. Back then, Brad had bought a model lab and Jack managed to pay the invoice. He said, "I was struggling then. It is the support when you have no money. Now I am in a position that I can pay him a decent consultancy rate. He still says, 'I don't want it, just go ahead and promote the thing'".

Through his own actions, Brad is now showing this same care for the environment, sharing his extended knowledge, and when possible, giving financial assistance with no strings attached. Brad summarised his position.

> *I am just really one point in the whole process. But that point can't exist without all the other points ... If you can put a bit back, you feel good. I think Jack taught me that, too, and he has been able to contribute, but yet step back and say, look, I am just one part of it.*

Jack commented that, "I've got this 'vision', to coin a phrase that has been used a bit lately, and the same thing with Brad and you just gear for it". Over the years, Jack has monitored the progress of his mentoree and noted, "It is good to see that the influence from me has gone to him to do that. He is sort of the extended branch of the evolutionary line, I suppose". Charles to Jack, Jack to Brad and now Brad to Randy - these individual 'points' are drawn into an extended line of mentoring which helps define the field environmental education that they all so keenly care about. This line branches out to included women through the third alpha mentoree, Sue, and her beta mentoree, Colleen.

5.4.3.3 Record 4B3 Jack, Sue and *Colleen*

Sue was identified as a leader for this study from several sources. She is known for her work in conservation movements and was involved with founding Men of the Trees. To understand her personality and career in environmental science, some autobiographical context is provided. Sue's first memory of the environment is reminiscent of Carol (Record 3C) who remembered a big frog and irises on her back porch when she was about two. Sue recalled:

> *I think you could say I was born into it. For what it is worth, my first word was frog and my second was flower. I didn't bother to say mum or dad for another eighteen months. They were peripheral to the natural, living world around me. My early childhood recollections I have been able to trace to sixteen months of age to do with surf, sand, forests, animals, plants.*

Sue, like Carol and Robert (Record 3C) and Charles in this web, had unusual childhood hobbies which were tolerated by their parents. Sue stated, "they could never really come to terms with my boiling up dead animals under the house to get their skeletons". Also like many of the participants, Sue had a chance to connect with a special place. Her happiest recollection is of her grandparents' dairy property. She claimed, "I was not interested in the dairying side of it, but I knew every fox that ate the chooks quite intimately. I collected buttercups". Sue said that she could never "reconcile city life with what I thought was lovely" and being raised in a city home with beautiful gardens, did not quieten her passion for the natural world.

When Sue went to secondary school, she was allowed to take zoology and points out a relevant social and cultural issue in Australia at that time.

> *Finally, I took zoology which girls were allowed to take, but boys didn't, because it was considered a sissy subject. Boys, to be real men, did geology and girls did zoology.*

Both Charles and Brad made mention of the difficulties in trying to follow their interest in zoology. Despite Brad's inspirational high school teacher, he had to transfer to another school to get the necessary subjects for university entrance, while Charles had to take physics for his first degree instead of zoology.

Novice career - the highs and lows

After finishing a degree in biology, Sue's first job was as a natural history museum curator refurbishing the collection of fish from the Great Barrier Reef. Three problems arose. Firstly, there was a health problem related to the use of formaldehyde. Secondly, in Australia in the 1970s a woman was not allowed to stay in her public service job when she married (a law which was later rescinded). Thirdly, while working, she stated, "I was threatened with transfers for being involved in the conservation movement which was at fledgling stage in Australia at that time. I joined the Australian Conservation Foundation early on". Sue professed a philosophical framework which is very strong and it is "well outside the existing parameters that our society accepts which puts me usually at odds".

Sue made a career change later on and commented, "So I decided I'd do the one thing I never really wanted to do - go teaching". This sentiment regarding teaching as a second choice, was echoed by Brad as well who said, "No way was I going to be a teacher. I'll do teaching for six months until a marine biology job comes up". At the time both these participants became involved with teaching, curriculum changes were underway. Zoology was taken out of the curriculum and replaced by a new biology course. There were changes from external examinations for university entrance to a moderated scheme of school-based assessment. While Sue found teaching the new biology very rewarding, Brad discussed the fact that he used marine-based fieldtrips to local areas, "as opposed to the biology text, *Web of Life*, and the rabbit study that kids may not have ever seen". Sue, on the other hand, tried to do something about the school's own environment to get kids involved. She recalled, "We set up a greenhouse and a lot of fish tanks, we just did up the whole building".

Initiation of the professional alliance

One of the things both of these mentorees would agree on is Sue's statement that Jack, who was teaching at the university at that time was "one of the most outstanding teachers I have ever encountered". Their initial contact came through Sue supervising Jack's student teachers. She remembered:

> *Jack came out to see how they were going at classroom teaching and that was my meeting with Jack. ...We showed him what we were doing, but I didn't take a great deal of notice ... I had heard of a Prof Jack and that he was very keen and enthusiastic man. But he was obviously far more interested in what I was doing than I realised.*

One of the things that Jack may have picked up was Sue's method of integrating education *for* the environment. Jack recalled that the college wanted teachers in biology and ecology and that "she was around to do the job. She had been rather interested in conservation and those are areas we have both been in agreement with. Her main area has been the love for the forest". Sue explained her teaching philosophy that intrigued Jack.

> *I tried to point from the moment I stepped into the classroom that this just isn't an academic subject that you leave, this is about life and this is what's happening and this is how our living world works. I was very, very aware of pushing a philosophical bandwagon .*

Jack promoted what Sue and her colleagues were doing in the school and she remarked, "he was the first person I had encountered who ever did that and it was totally revolutionary. Nobody in the hierarchy of education was the least bit interested in teaching kids about the natural world other than via the recognised authority which was biology as a science".

When Sue began to see Jack as a mentor, she disclosed

> *I don't think for me Jack was a mentor in the traditional sense of the word in that he had very little input into my academic knowledge ... Jack's mentoring role has just been that push into environmental education.*

As a result, Sue got more involved in school land projects, saying it was "a philosophical thing, that is, how you look after it, take care of your school".

Sue brought out an interesting point regarding the teaching of science at that time. She said, "There was no one into environmental education which allowed the geographers to invade a field that was very empty. I think they recognised that here is an opening, boy we'll exploit it". This rings true from the statement made by Mary (Record 4A1) when she said, "I think a lot of environmental studies people came to it through a study of geography, maybe more so than science or any of the other areas". However, Sue sides with most of the people who hail from a scientific background, including her mentor, regarding whom should speak for the environment. She argued:

> *I think as spokesmen for the environment the people we need are not geographers, not biologists, but ecologists -*

> *people who understand biology, chemistry and have a fairly good grasp of the basis of physics ... We're only just now, the last fifteen years, turning out genuine ecologists. I think ecology has a public relations problem. To become an academic ecologist, you have to be extremely widely informed from all the other sciences to integrate them ... Therefore, I think it is the hardest science there is because it demands ... such an incredibly wide educational background.*

Personal friendship in tandem with the professional alliance

Jack said that the relationship with Sue became personal as well as professional and went on to describe their affinity for one another:

> *It's been mainly communication. She lived across from us and that gave it a context socially ... and it would work it's way to a discussion of the environment. I always remembered her as having a very strong interest in the environment. We both respected one another for what we knew. She was a different kettle of fish. When I say that, she is very bright and also has participated in writing books at a tertiary level in relationship to ecology, so she certainly knew her stuff. Both of us still have the same attitude towards the environment overall.*

Jack's statement brings out many points found in many of the mentoring relationships in this study - opportunity, social and professional context, and, importantly, sharing the same attitudes toward environmental education. Sue felt the relationship had "a reasonably slow development of a close friendship where both of us took pleasure in doing the same thing together".

> *We we're both very interested in rainforest ecology ... in Australia rainforest is the most intriguing system because it is ancient and Jack became more and more obsessed with rainforests what their evolution is, what their distribution is and what the ecological conditions are. He encouraged me to pursue this as a teacher at tertiary and at secondary level. It was Jack's*

> *encouragement in the education side that made a big difference.*

A career transition

When Jack needed to do his work on his master's thesis, his position at the teachers' college was available to be filled temporarily and Sue applied. She said, "I discovered this man had set up a really advanced, interesting program for his kids".

Sue was very impressed by Jack as a academic because he exhibited an incredible interest in the people he was teaching as well as having a sound knowledge of what he was teaching. She said that they developed a close working relationship, especially when Jack started his rainforest study area at the college. Later, she had helped Jack to author a monograph on that area and described his great interest in this ecosystem.

> *... up to that point you had been taught that Australian rainforests were something that was left over from when we had an invasion from the north, just some sort of primitive backwoods, the traditional euro-central attitude. And Jack realised that probably everyone's perception was changing and here we have something left from a very long time ago that was pivotal in the evolution of Australia's flora. I think Jack's enthusiasm for this changing perception is what impressed me most. His drive to get it across to people. His love of what he was teaching and his interest in it and his interest in teaching itself.*

This statement echoes Jack's appreciation of the knowledge base of his supra mentor, while Sue, like Dave and Brad, were impressed with Jack's special ability to identify rainforest plants from minuscule parts. But she noted, "When he goes into the rainforest with me, I can often tell him far more about the processes that are going on. So it is probably a complimentary relationship ... He's into the taxonomy side and evolution and I'm much more knowledgeable about processes". Jack remarked:

> *We are fairly much on an equal par when it comes to doing things, like planting trees - she'd assist with it. We were concerned with writing a book together on establishing the rainforest down here and that is probably where our greatest strength lies and we really got together and started to talk more about the environment. She supported the ideas that I had.*

Jack appreciated the fact that Sue, like Dave and Brad, was also a critical thinker "who would be prepared to tell me if my ideas weren't any good". Jack showed himself to be an effective mentor and not someone interested in creating clones. He encouraged each of his mentorees in their own area of expertise - Dave's knowledge of vines, Brad's speciality in marine studies and Sue's understanding of ecosystem processes.

The activist mentoree and the quiet mentor

Sue had intended to finish her PhD, but recurring health problems interfered, so she turned her interest to the outdoors and became more involved with the conservation movement. Sue charted her time with the Australian Conservation Foundation showing how she stayed true to her sense of environmental education ethics.

> *It was formed before I was really old enough to think about it. I joined in 1970. Then I resigned because it became a very conservative, very blue-ribbon liberal type of organisation.*

After stints with other conservation organisations, Sue concluded, "I kept coming up with a basic philosophical incompatible approach to conservation from the existing conservation organisations". She argued, "I think the only reason governments give credence to environmental concerns is that the grassroots movement is so strong". Her views are compatible with those of Brad, Jill (Record 4A3) and Gary (Record 3B). Sue recognised that her mentor, Jack, does not share this activist view and noted, "I am far more radical than Jack is. He encouraged me with the teaching side ... he is much more conservative politically than I am".

Sustainment of the relationship

Despite their political differences, Jack has sent work Sue's way or has acted as a referee for jobs that she may not have gained otherwise as a free-lance environmental consultant. She described the on-going nature of the relationship saying:

> *I feel that I have not made the use of Jack that I could have of late, although we still remain very close friends simply because I find it very difficult to work in cities (for health reasons). If I wanted to, I could get on the phone to Jack and say look I need to know someone who does such and such and he would immediately react and give me the response very quickly.*

Sue reflected that their friendship has been maintained not only between themselves, but also with their families, especially Jack's wife who is a close friend. We have seen this pattern of inclusive friendship in several records such as Glen and Winifred (Record 1C) and Dr. Gordon and Richard (Record 2A). Although Sue had no hesitation to acknowledge Jack as her mentor, she remarked:

> *I guess we have known each other so long that he would wonder why suddenly I would need to say it ... I'm not sure that if I said that now to Jack he wouldn't be terribly embarrassed because he knows me so well. It should have been said years ago which was when the critical period existed.*

Both Sue and Jack felt that they are equals and intend to continue their fifteen year long mentoring relationship. The acknowledgment of mentoring is an important realisation and one which can lead to more deliberate transmission of mentoring as evidenced by Sue's relationship with Colleen.

The cascade of influence - *Colleen*, a beta mentoree

Sue said that she has been a mentor for a number of her past students who have gone on to various careers involving environmental education and spoke of Colleen, in particular. In order to take Sue's biology class, Colleen was seen to be "sticking her neck out" because it was considered a soft option to Applied Maths for a university-bound student. Sue remembered taking her on fieldtrips and emphasised that although there were others, Colleen was the one that she particularly aimed to influence. Sue described what motivated her to begin this deliberate mentoring with one of her best students.

> *Colleen was very talented, very interested and she understood things the other were struggling with. She could pick it up very fast. She was one of the few who was able to go from biology as it is taught in schools to realise that it was just the very introductory course and to investigate things more thoroughly.*

Ironically, when Colleen went on to university, she met up with her mentor again. Sue was pleased by her mentoree's self-confidence and burgeoning intelligence.

> *We were in the same class a couple of time when I was adding botanical subjects to my list of subjects that I studied ... you could tell the relationship wasn't equal because at the same time I was tutoring for the faculty of education and I was racing off to see Dip Ed students in the classroom. It was quite a long time before I felt Colleen got over me being the teacher and her being the student - five or six years after she left school.*

This same pattern was noticed in Record 4A between Jill, the teacher, who knew Gina from school days. What is important is the mentor's ability to actively encourage those they feel would benefit from the relationship.

From a novice mentoree to autonomous leader

Colleen went on to become a senior scientific officer with the National Parks and Wildlife Department and one of their experts in dry woodlands. Sue emphasised, "Certainly she and I worked really closely together, and we maintained a very occasional contact". Colleen was unable to be contacted for an interview due to illness. However, Sue was asked that if she were to run in to Colleen today, would the relationship pick up as before. She replied, "Absolutely, I went to see her a year ago but she was still on sick leave". She went on to describe how they met for dinner in Canberra sometime back and recalled an incident which showed the beta mentoree's transition in this relationship from a 'novice' to a 'co-lateral peer':

> *I had a confrontation with her over the term 'rainforest garden' - that we couldn't build it. That was when I realised she had changed and she took me on as a peer. She said it was naive.*

In many other mentoring settings, confrontations like this might have ended the relationship with the mentoree being seen as having outgrown the needs of the mentor. However, it is important to note that this has not been the case with participants in this study. Ken and Liz (Record 3B) were able to mend their rift when the mentoree got promoted above her mentor; James and Jill (Record 4A3) were able to work together again after a strong disagreement which caused a hiatus in their relationship; Sue continued to be in contact with Carolyn despite differing scientific views and periods of dormancy caused by illness. All of these relationships have been underpinned by a philosophical congruence regarding environmental education, that is, a basic agreement on the goals, ethics, scientific knowledge base, processes of teaching through fieldwork, the awareness of impacts both local and global and the inclusion of broader social issues. In the end, this platform of beliefs and values formed a strong enough foundation to withstand temporary personal disagreements.

Encouraging the 'cascade of influence'

When Sue was asked on part of her survey to describe how best to continue mentoring, she chose the words - intentional, informal, useful, unplanned, encouraging, personal and professional. Sue had found this sort of mentoring for herself in Jack and filled this role for Colleen explaining:

> *I don't think you can set that up. I think it has to be intentional when you meet. I can share something with you. I don't think you can set it up in advance because personalities are so overwhelming. There has to be a click. Like there was with Jack and myself. Mentoring, I think, is something that happens or doesn't happen.*

Sue said that she had never seen a structured mentor relationship work and mentioned one tried at a university. Gary (Record 3B) might agree as he found that the formal mentoring tried at his business became a matter of 'prestige'. Sue concluded that, "You cannot set up a mentoring relationship. It is obviously pivotal for a lot of careers, but you have to be lucky". Jack, too, mentioned this idea of serendipity, remarking, "in my case that just developed, more accident than design. I suppose a bit of luck in the long run".

If the mentoree gets the 'luck' of having someone to encourage, support and sustain them, what are the benefits for the mentor? Sue said that her new mentoree has not yet acknowledged that role to her, but felt that "the reward is to know that you have contributed something to that person's life and that what you have contributed is something worthwhile knowing". Mentoring in any field has been shown to incorporate a professional side and often times has a personal dimension. However, in this study, the phrase 'worthwhile knowing' has been used by many participants to refer to commonly held knowledge, attitudes and values regarding environmental education.

A final word from the pivotal mentor

In summary, Jack, the pivotal mentor provided some overall comments about his three different mentorees. He said that they were "really game" and that they will go out into the unknown and extend their ideas. He says, "I suppose it is the same sort of risk that I take, too... It is never from the simple to the complex, but from the known to the unknown". Jack has enrolled these mentorees in his vision of environmental education which was passed on from his own mentor, Charles. But, being an effective mentor, he has allowed the mentorees to 'move beyond', claiming:

> *The things that I do like about those three (Brad, Dave, Sue) is that they do what they say they are going to do in the end. They see the task and see that you are doing the right thing, and basically back you up, but they also go that extension further. Once they sort of consolidate what they have learnt from you they will now go ahead and project further ahead. The sort of things ... that I want to do, but I don't do and can't do. They do it. I've*

> *gotten to the stage where I can learn something from them now which I feel is good. I like that idea.*

Jack has reiterated the key ideas for sustaining a long-term mentoring relationship - equality, mutuality, and reciprocity. He felt it was important to monitor mentoring through studies like this one because it made him reflect "about people who have influenced me and how I can go about influencing people that way". He emphasised, "I think we are seeing that the important thing for a mentor is to 'wake people up' ... You have got to get across the values". Jack's final statement summarised the shared environmental philosophy that has been documented between all of the mentors and mentorees, be they in pairs, triads, chains or webs. This philosophical bonding seems to be a vital factor in the experiences of mentoring for these environmental educators.

5.4.4 Commonalities within Records 4A and 4B

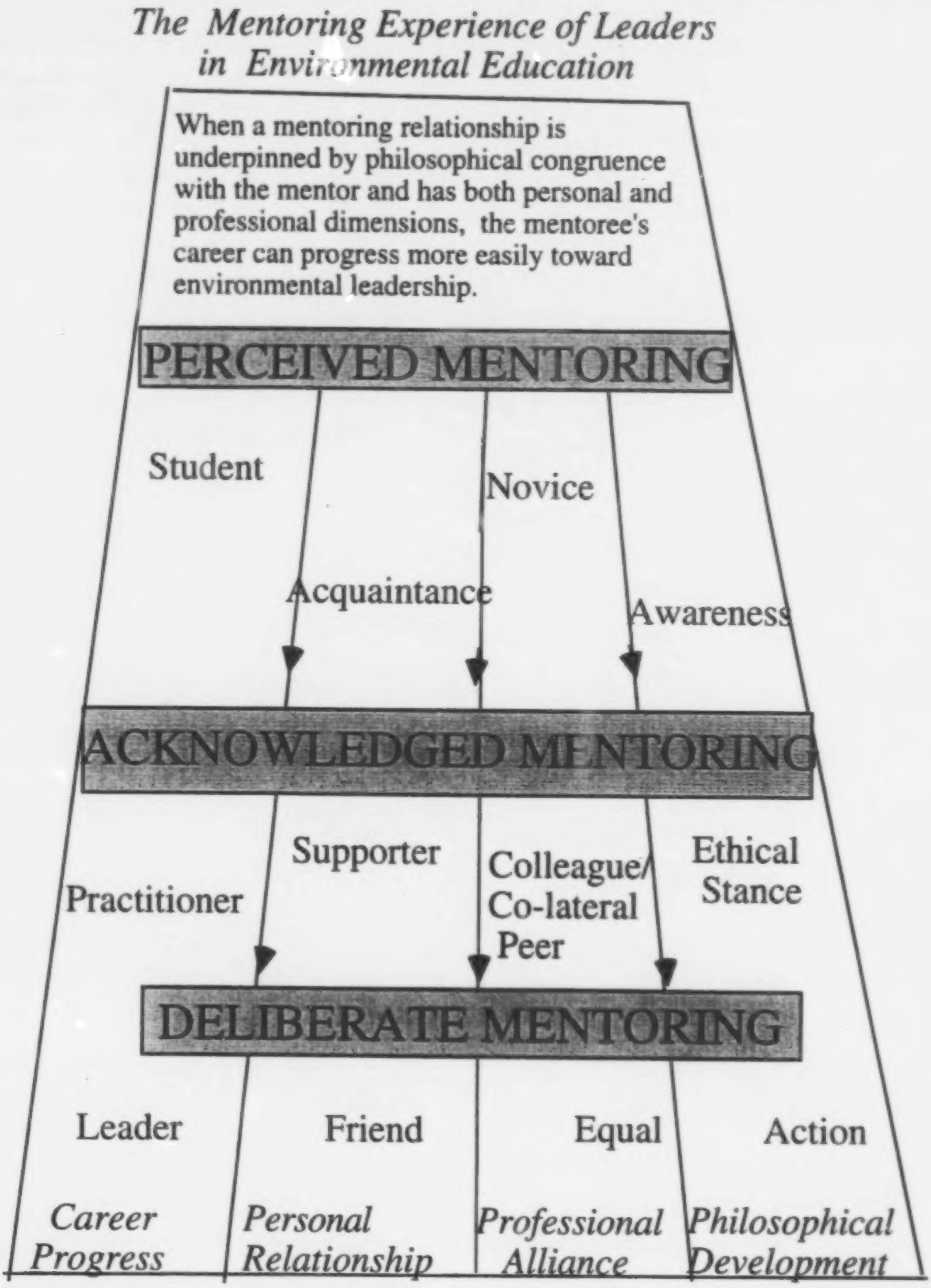
Movement in career progress and philosophical development

Case Four has examined webs of mentoring relationships based around pivotal mentors and has shown how a cascade of influence has been extended to new beta mentorees. These relationships can be characterised by a continuum of philosophical development as the mentorees move from 'awareness', to an 'ethical stance' and then to 'action' in regards to environmental education. The stories have emphasised a congruence of thought and commitment shared between the mentors and the mentorees which is a key factor in the sustainment of the relationships despite periods of dormancy or rupture.

Figure 5.10 illustrates how philosophical development can enclose mentorees' career progress and mentoring relationships. A fourth proposition is offered which states: when a mentoring relationship has both personal and professional dimensions, the mentoree's career can progress towards leadership when there is a corresponding growth in environmental philosophy. Philosophically-based leadership in environmental education can take place without the influence of an identified mentor as evidenced by participants like Bob (Record 1A), Glen (Record 1B), Barb (Record 1C) and Charles (Record 4B1). However, when mentoring is acknowledged and it includes a philosophical congruence, the participants describe rich and beneficial relationships which are enjoyed on both personal and professional levels by the mentorees and their mentors.

The pivotal mentor

Records 4A and 4B revolved around a pivotal mentor who had been nominated by multiple alpha mentorees. The mentorees came from different professional orientations, and may have known each other from common networks but they had not revealed their mentoring to one another. Although both records came from Australia, a similar pattern was found in the survey responses from the United States where the pivotal mentor was a woman with two younger women and one older man as the mentorees. Due to logistical circumstances, it was not possible to follow through the US interviews.


The Mentoring Experience of Leaders
in Environmental Education

When a mentoring relationship is underpinned by philosophical congruence with the mentor and has both personal and professional dimensions, the mentoree's career can progress more easily toward environmental leadership.

PERCEIVED MENTORING
Student
Novice
Acquaintance
Awareness
ACKNOWLEDGED MENTORING
Supporter
Practitioner
Colleague/
Co-lateral
Peer
Ethical
Stance
DELIBERATE MENTORING
Leader
Friend
Equal
Action
Career
Progress
Personal
Relationship
Professional
Alliance
Philosophical
Development

Figure 5.10 The mentoring experiences of leaders in environmental education.

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The window of opportunity for women in environmental education

A pattern of increased mentoring of men to women and women to women is found in both records. Jill in 4A3 and Sue in 4B3 mentioned that women have always been active behind the scenes at the grassroots level of environmental education organisations The women in this study provided examples of those who have moved into leadership positions in natural resource departments, volunteer organisations and educational administration. However, it is noted that as environmental education leaders, they are still under-represented in academia except for guest lecturing.

Deliberate mentoring at any level

The concept of deliberate mentoring is found in both Records 4A and 4B. Isaac, a supra mentor, was unusual in that he communicated to James the deliberateness of his mentoring when he said, "I have worked very hard at that". Heather, an alpha mentoree, stated that James, the pivotal mentor, "has always acknowledged that I was a protégé", yet he was reluctant to accept the mantle of being a mentor. Gina, a beta mentoree, knew that Jill had deliberately mentored her and felt she had benefited by the personal care and the professional opportunities offered by her mentor. Although Mary, another alpha mentoree, stated to the researcher her deliberate intent to mentor Winifred, it is not certain if she had communicated that to her mentoree. This same holds true for Brad and Sue. Does knowing for sure that one is being mentored make a difference in the progress of the mentoree? James's comment may hold the key when he told his mentor, Isaac, "That means, I'm successful, doesn't it". Brad also felt that gaining self-confidence from one's mentor, as he did from Jack, can 'knock the tall poppy syndrome' and may spur a mentoree on to further leadership.

A continuum of development

One can look at the position of a mentoree at the beginning of the mentoring relationship as being on a continuum for both career progress and philosophical development with the personal relationship and the professional alliance unfolding inside these two mantles. *Figures 5.11* and *5.12* show how there has been change after the intervention of mentoring.

CAREER PROGRESS

Web 4A	Student	-->	Practitioner	-->	Leader
Before Mentoring					
			James (**Isaac*)		
		Heather (James)			
	Gina (Jill)		Mary (James)		
			Jill (James)		
		Diane (Mary)			
	Winifred (Mary)				
After Mentoring					
					James
					Heather
				Gina	Jill
			Winifred	Diane	Mary

Web 4B	Student	-->	Practitioner	-->	Leader
Before Mentoring					
			Jack (**Charles*)		
		Brad (Jack)			
			Dave (Jack)		
			Sue (Jack)		
	Colleen (Sue)	*Randy* (Brad)			
After Mentoring					
					Jack
			Randy		Brad
					Dave
				Colleen	Sue

italics - no interview held
* - no mentor identified

Figure 5.11 The career progress of participants in Records 4A and 4B before and after mentoring.

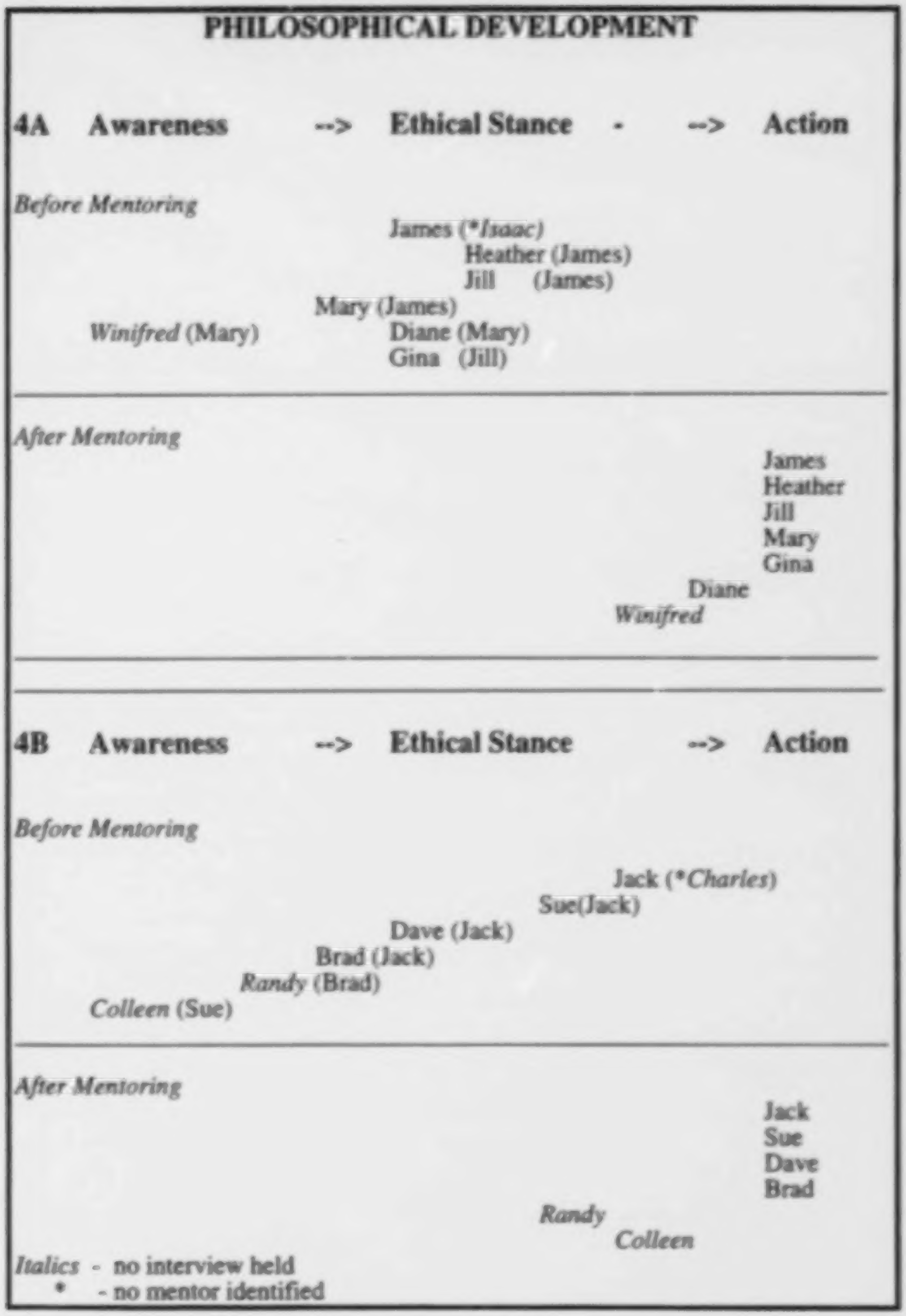

PHILOSOPHICAL DEVELOPMENT
4A Awareness --> Ethical Stance · --> Action
Before Mentoring
James (*Isaac)
Heather (James)
Jill (James)
Mary (James)
Winifred (Mary)
Diane (Mary)
Gina (Jill)
After Mentoring
James
Heather
Jill
Mary
Gina
Diane
Winifred
4B Awareness --> Ethical Stance --> Action
Before Mentoring
Jack (*Charles)
Sue(Jack)
Dave (Jack)
Brad (Jack)
Randy (Brad)
Colleen (Sue)
After Mentoring
Jack
Sue
Dave
Brad
Randy
Colleen
Italics - no interview held
* - no mentor identified

Figure 5.12 The comparison of philosophical development of participants in Records 4A and 4B before and after mentoring.

It is logical to assume that those who began as students would naturally progress to the practitioner stage. Some of these people would probably have gone on go to become leaders with or without their mentors, such as Jill or James (Record 4A) and Jack and Brad (Record 4B). What has been revealed through this study is that the mentor has had an important role in spurring on leadership development. Mary and Gina (Record 4A) brought out this point when they discussed being put into new situations in which they succeeded. Dave and Sue spoke of developing expertise encouraged through their work with Jack (Record 4B).

The mentor's influence on philosophical development

From these webs of relationships it has been shown that the participants were at different stages of their own philosophical development when they met the mentor. Did the influence of a mentor help the mentoree progress from an awareness of environmental issues to the need for a more firmly developed ethical stance? Were they encouraged to carry through their beliefs and values into action for environmental education? Gina (4A3) was a student when she was first met Jill, but by the time Jill became her mentor Gina had a fairly well-developed sense of environmental ethics as shown through the course she was teaching at university. At the end of this study Gina was nearing leadership in running field studies for marine educators and her philosophical stance was now one of action constructed within ethical considerations.

Brad (Record 4B2) was a fairly new practitioner and was looking for ways to enhance his teaching through fieldwork. He was more than aware of environmental issues having grown up with a love of the sea and that formed the basis of his environmental philosophy. However, he still was developing his own sense of environmental ethics, that is a method of putting his philosophy into action. Aldo Leopold (1949: 239) had defined this type of 'ethics' over forty years ago.

> An ethic may be regarded as a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not discernible to the average individual.

When Brad met his mentor, Jack was already known for his scientific expertise and was quietly putting his philosophy into action. Through

Jack's support and encouragement, Brad made a career change and today he is recognised as a leader in publishing environmental education materials. Brad's philosophy is shown in his actions as he offers his new mentoree, Randy, both intellectual and financial support for his environmental projects.

The commitment to fieldwork

Participants in both webs, no matter their geographical or scientific orientation, show an affinity for fieldwork as an effective way to get across environmental ideas to students, volunteers and community groups. Often this pattern was modelled by the mentor and passed on to the mentoree. We see this transfer of techniques from Mary to Diane and Winifred (Record 4A1) and from Charles to Jack to Dave (Record 4B1). Those involved with schools, like Mary and Jill (Record 4A), Charles, Brad and Sue (Record 4B), found administrative resistance to this approach for environmental education, but persisted anyhow.

Shared Leadership

Both pivotal mentors allowed and encouraged a shared leadership where the mentoree could bring his/her individual area of expertise to bear. Heather in 4A commented on her various committee projects with James, while Jill's latest project with him required that each contribute their own skills. Dave (Record 4B1) explained the cooperative team work for fieldtrips in which he and Jack had participated. The commonalities in these two records are many and their effect is similar - effective mentors encourage career progress and philosophical development of their mentorees so that they may become autonomous thinkers capable of assuming leadership roles for environmental education.

5.4.5 Comparisons across Case Four

Differing Themes

Case Four provided evidence to show that if a mentoring relationship is underpinned by philosophical congruence with the mentor and has both personal and professional dimensions, then the mentoree's career can progress more easily toward environmental education leadership. As in the other cases, the researcher aimed to bring out different themes which

Table 5.6 Different themes from Records 4A and 4B.

CASE 4A	THEME	THEME	THEME	THEME
	Gender and Age	Orientation	Mentoring as seen by the mentoree	Leadership ideas
Isaac		schools	deliberate	leave someone to follow
James	women to women	university	acknowledged	shared leadership
Heather		education department	perceived	sustainable environmental development
Jill	older woman, younger man	marine education	perceived	sharing expertise
Gina		outdoor education	acknowledged	fire in the belly
Mary	older woman	geography	perceived	deliberate help
Diane		Landcare schools	acknowledged	systems approach
Winifred	Landcare communities		deliberate	willing to learn

Case 4B	THEME	THEME	THEME	THEME
Mentoring position	Professional alliance with mentor	Characteristic of the mentoree	Audience for environmental education	Philosophical Considerations
Charles		educate each at his level	students, volunteers, community	Action: turtle research
Jack	reciprocity	unassuming science expert	teachers and colleagues	Ethical Stance: scientific understanding
Brad	co-laterality	self-starter, no tall poppies	teachers and community	Ethical Stance: compromise in business
Randy	novice	willing to learn business perspective	education field	Awareness: bridging education and business
Dave	colleagues/ equals	find his niche of expertise	biology students	Action: Fieldtrips for all
Sue	co-lateral /equals	activist ethics	conservation movements	Action: update conservatives
Colleen	co-lateral peers	challenging the mentor	Parks and Natural Resources	Ethical Stance: Balancing agency views

evolved from the records to substantiate this idea. The themes shown in *Table 5.6* include philosophical stance, philosophical consideration, professional alliance with the mentor and how mentoring is understood as well as gender, age differences, orientation to the field, characteristics of the mentorees and the audiences for environmental education.

Difference in orientation

Web 4A featured a group of geographical educators who came to environmental education during periods where social issues such as the Vietnam war, nuclear testing, and development studies were dominant. They finally began to incorporate the combination of education *in* and *for* the environment during the early seventies. Many of them were dedicated to having students *in* the field to explain the impact of humans on the physical environment and using social justice issues *for* the understanding of environmental issues. Today geographers recognise the need for a credible base of scientific knowledge *about* the environment in order to educate *for* an 'ecologically sustainable environment'.

On the other hand, the participants in Web 4B share a strong science background. They came to environmental education by looking at education *in* and *about* the environment, that is, using fieldwork to learn about the scientific phenomena, especially in local areas. Today they recognise the need for combining this knowledge with an understanding of the social consequences of environmental change and have come to look at education *for* the environment.

A combination of these approaches is seen in the example of Jill who admitted that she had to study and learn from scientific papers in order to present environmental education ideas to the broad audience of people interested in marine education.

Discrepancy - the indoor theorist

James in Web 4A was unusual in that he did not share an affinity for the outdoors as did his mentorees nor those participants in Record 4B. Also, being an academic theorist caused him some friction with those who considered themselves practitioners. This was brought out more than once when is was noted that James preferred to work with people who saw environmental education from his specific point of view. This contrasts with Jack in Web 4B who is described as an unassuming person with a firm commitment to environmental science who seemed to have a fair tolerance for his mentoree's evolving philosophical stances. However, neither James's 'indoor penchant' nor his outspoken theoretical position seemed to be an impediment in his effectiveness to convince others of the need for environmental education.

Age difference

Three variations in age are exhibited in comparing these records. Isaac (Web 4A) classically, was the older mentor giving advice to a younger male mentoree, James. Yet, Mary and Jill do not seem to have trouble relating to James, their younger male mentor. These mentorees continue the mentoring cascade as older mentors to younger women mentorees.

Web 4B illustrates an important idea that contemporaries can be mentors for one another. Only five years separate the supra mentor, Charles and the pivotal mentor, Jack, while two of Jack's alpha mentorees, Dave and Sue are only five years younger. Both Brad and Sue continue the flow of mentoring, but, typically, with younger mentorees. In the end, these variations show that something other than age must be the critical factor for effective mentoring as seen in this sample.

The Legacy of mentoring

Isaac (Web 4A) left his mentoree, James, the legacy of looking for someone to fill his role, ie. passing on the torch of mentoring. Yet, Heather stated that James had called her his 'protégé', but when James was contacted as her mentor, he didn't recognise the full mentoring relationship as such until the interview. Instead he talked about working at a collegial level with many people throughout his network and encouraging 'shared leadership'. This shows that there can be breaks in the mentoring cascade if the relationship is not acknowledged. However, the participants were able to identify readily the mentoring process when it was revealed and they were quite adamant in distinguishing it from networking and professional collegiality which they felt did not encompass the personal relationship necessary for mentoring.

5.4.6 Similarities and Differences across Cases One, Two, Three and Four

One of the notable similarities in the mentoring stories told across the four cases is the 'quietness of the mentors'. Only a few of the leaders had mentors who were well-known outside local circles. Those would included Dr. Gordon (Record 2A) who disclosed that he is more known for writing the leading bird identification book in South Africa than his daily university teaching or his style of mentoring for Richard, now a continent away. Aldo (Record 3A) is known as the 'father of environmental education in America, yet his perceived mentoring for Paul was through his writings and Paul's 'pilgrimages' to his cabin with students. Internationally, the academic reputation of James (Record 4A) continues to grow while back in Australia his mentorees share their leadership through various environmental education networks. Charles (Record 4B) is known in the Asian rim for his turtle research which began in Australia while Jack's local reputation is for his 'rainforest garden'. These pairs of mentors and mentorees continue to admire each other's accomplishments while appreciating their differences in styles of presenting environmental education.

What draws all of these 'quiet mentors' into a common pool is their considered ethical stance and their passion for spreading the message of environment education. Through their mentorees they influence a wider and wider circle of people. People like Bob and John (Record 1A) who 'stick to their guns' in informing the bureaucracy of the Division of Wildlife argued that environmental education is a major way to impact today's children, get the message back to the parents and influence future generations. Glen (Record 1B) continues to run an environmental education centre, while Wendy inspires her students and school with projects like Koala Protection which take in more and more of the community. Barb and Ed (Record 1C) spread the knowledge of water testing to students and teachers throughout the state of Colorado and confront lawmakers with their results; meanwhile their efforts are being incorporated into US national projects like the Globe Water Network.

Ivo (Record 2B) now moves in the national science policy arena as a result of his state work with biology teachers. He has cultivated his mentoree, Sally, to take his place in the Colorado organisation. Cem (Record 3A) modelled his mentor, when he, too, became a professor at university, but unlike Paul he intends to publish more often. Moreover, Cem exhibits a more flamboyant manner as a naturalist interpreter and coined the phrase, 'join the clan'.

Robert (Record 3C) continues to write and his audience grows as does their environmental awareness. He still acts as a touchstone for Carol as she makes different career transitions while Carol fulfils that same role for Pattyanne. Sue (Record 4A) continues Jack's style of subtly influencing Colleen in developing her philosophy toward environmental education. Diane (Record 4B) will take the best from Mary and develop her own systems approach for distributing environmental messages. Winifred will benefit from direct instruction by Mary.

All of these mentorees have attested to the effectiveness of their relationship, be it quiet mentoring from someone known only to a select circle, or having the attention of someone with a wider reputation. Each mentoree is like a small pebble dropped into the pool of environmental education resulting in the message being transmitted into larger and larger concentric circles, cascading from one pool into another. No pebble is too small to have its own effect. The participants in this study have spread the principles of environmental education across a broad field from schools and academia, to natural resource agencies, to private consulting and publishing businesses.

Career transition and mentoring

The second major similarity across the four cases is the amount of career transitioning which goes on not only among the participants of the interviews, but also with the respondents to the questionnaire. Figure *5.13* shows graphically how the mentors and mentorees have changed positions. Many began in schools and moved to academia, natural resource departments, consultancy and private business. Ann, for example, moved from natural resources into teaching in order to promote environmental education ideas better. Several participants stayed in the same position: Wendy, Sally and Ed remained teachers; Glen and Orin became principals; and Isaac and Heather moved into Department of Education administrative positions. This pattern is also seen in the natural resources area. Diane and Winifred have stayed in their positions with Landcare; Bob, John and Barb have all moved up into regional positions with the Division of Wildlife, Colleen had

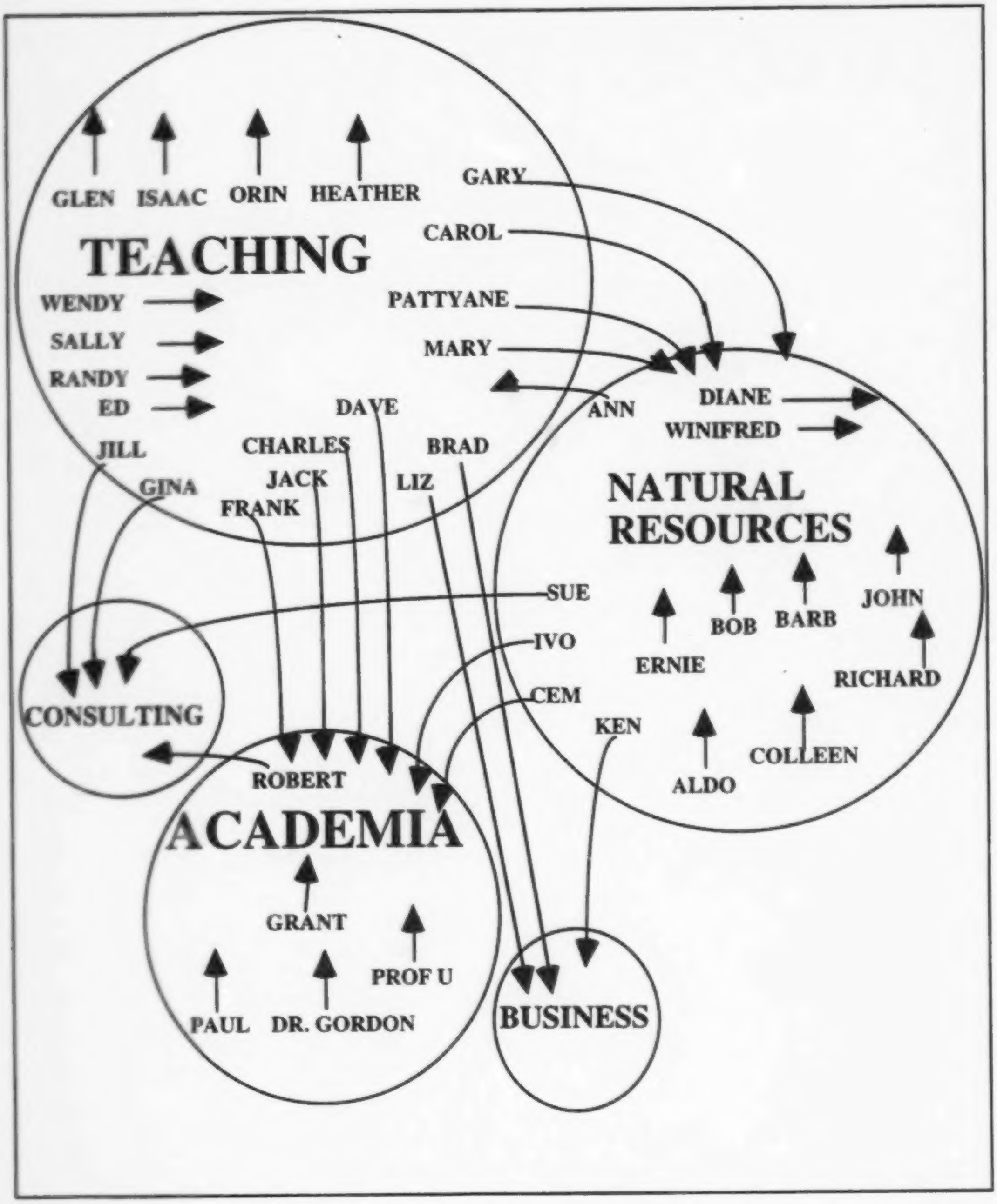

TEACHING
GLEN
ISAAC
ORIN
HEATHER
GARY
CAROL
WENDY
PATTYANE
SALLY
MARY
RANDY
ED
DAVE
ANN
JILL
CHARLES
BRAD
GINA
JACK
LIZ
FRANK
DIANE
WINIFRED
NATURAL RESOURCES
SUE
JOHN
BOB
BARB
IVO
ERNIE
RICHARD
CEM
KEN
COLLEEN
ALDO
CONSULTING
ROBERT
ACADEMIA
GRANT
PROF U
PAUL
DR. GORDON
BUSINESS

Figure 5.13 Career transitions of mentors and mentorees within the field of environmental education.

advanced in her career with the Parks Department. For those who have stayed in or moved to academia, most have attained the level of professor.

Many participants moved out of their initial job, but they have chosen to stay within the broad field of environmental education. Jill and Gina were teachers, Sue was in natural resources and Robert worked in academia. Today they work essentially as consultants. Brad, a former teacher, works in private business, while Liz and Ken moved to a quasi-governmental Board of Water Resources.

The role of the mentor has been important during a career transition. The mentor often played the role of sounding board, supporter or job referee. They were in a position to persuade and encourage their mentorees, but, in this study, they were not in a position to hire or fire. This is a salient point and helps explains why most of the participants were not interested in formal mentoring programs where the mentor may be in an evaluative or hierarchical position. The most important aspect, however, is that the mentoring relationships endured despite these frequent job changes. This is not often the case in other areas such as nursing, business and academic settings where formal mentoring is more prominent and the relationships have a specified duration.

Differences in accepting the mantle of mentoring

The alpha mentorees were given the choice of having the researcher contact their mentor or doing it themselves. The majority chose to do so themselves saying that it would be a good opportunity to renew the relationship if there had been a period of dormancy or to say thank you because it had been an unspoken relationship for so long that it was taken for granted. When participants who were prime, pivotal or supra mentors were given the same choice regarding their mentors, they responded similarly.

As explained in Chapter Three, Section 3.6.2.4, a few of the original leaders in this study had been moved to a different level of mentoring when they were nominated as a mentor by another leader. Carol was nominated by Pattyanne (Record 3), Mary by Diane (Record 4A1), Jill by Gina (Record 4A3) and Jack nominated by all three mentorees, Brad, Dave and Sue (Record 4B). Since the survey had been filled out by all of them, those now designated as mentors themselves had an interesting reaction. Sometimes it was perceived as an embarrassment underlain with a sense of modesty and humility, particularly, if the mentor and mentoree had known each other for a long time. At other times, the acknowledgment was a pleasant surprise, because that person had recently analysed what he/she had meant by a mentor on their own survey and had chosen their most important mentor for environmental education. In turn, they were consciously seen in the same light by another leader.

Some participants like James, the pivotal mentor (Record 4A), had a difficult time accepting the terms 'mentor' and 'leader', preferring designations like 'colleague' and 'shared leadership'. Ironically, he had little trouble ascribing the same characteristics to his own mentor as his mentorees had in defining their relationship with him. James, was the only participant who required a verbatim transcript and clearance for his story. In the end, he wrote the following:

> *Thank you for the opportunity to provide a face validity check. I was very humbled by the accounts. I believe they represent a fair interpretation.*

Embarrassed, pleasantly surprised or reluctant, once the mentoring relationship was acknowledged, the description of what made the relationships effective had many common characteristics. There was a spark of interest, an initiative by both persons to develop the acquaintanceship into a friendship, the professional help for a novice to move toward equality with the mentor, a shared philosophical base, personal support, encouragement and reciprocity as both leaders and mentors acted out their environmental beliefs. There were only two discrepancies to the continuing relationships, Liz and Ken (Record 3B) and James and Jill (Record 4A3). Both of these pairs were able to repair the rupture. All of the relationships which have not ended by death are sustained to this day over distance, time and changes of career.

The need to reflect on mentoring

The most important summary statement made by most of the participants in all four cases, dealt with the need to take time to reflect on the idea of mentoring, particularly as it applies to environmental education. What has mentoring meant in their own lives; how have they been part of this experience for someone else; what are the benefits some have received both as mentorees and mentors; and how can they envision mentoring being passed on to future leaders? The fact that the participants were willing to disclose the personal details of their own experiences for this study, signifies that mentoring is a topic which holds importance for them and one which they felt merits further exploration.

5.5 Summary of Chapter Five

In a gentle way you can shake the world. *Gandhi*

Broad field of environmental education

The mentoring stories presented in Chapter Five examined the antecedents and processes of mentoring, characteristics of mentors and mentorees, and the efficacy of the relationship for both parties. The four cases demonstrate that there are commonalities in the mentoring experiences which can be drawn across several countries. This study purposely chose people from the USA and Australia, but three other countries - South Africa, England and Turkey were represented. This added a richness to the data and reinforced the universality of mentoring at least for the predominantly western cultures represented. It also raised questions about the phenomenon of mentoring in eastern cultures which were outside the scope of this research.

Different aspects of the environmental education field were chosen by the researcher in order to investigate if the mentoring process was dependant on the setting or orientation of the participants. Mentoring experiences took place within various settings of teaching, academia, administration, business, natural resources, consulting, and business. There were two different orientations for the study - geography and science. However, none of these factors seemed critical to the mentoring relationship. What was critical was how the two people reacted personally within the mentoring situation and, importantly, how they both felt about environmental education.

Categories of mentoring

The terms hyper mentor, supra mentor, prime/pivotal mentor, alpha mentoree and beta mentoree have been defined specifically and help placement of the various interviewees within the stories as shown in *Table 5.7*. However, in the final analysis the people all fit into one of three categories as ascertained within the limitations of this study-mentor only, mentoree/mentor; or mentoree only.

If the mentor furthest back in the triad or chain was not able to be interviewed, that relationship was described as 'perceived', since it could not be verified by the other person. Those relationships in which both people were interviewed were seen as both 'perceived' and then 'acknowledged'. When a person spoke about or was said to have set out consciously to mentor another, this relationship was termed 'deliberate'.

Deliberate mentoring was found at various levels throughout the mentoring histories. It was described between the supra mentor, Paul, and the prime mentor, Cem, then between Cem and the alpha mentoree, Ann (Record 3A). The prime mentor Carol set out to help the alpha mentoree, Pattyanne (Record 3C). The supra mentor, Isaac, purposely mentored the pivotal mentor, James (Record 4A), but then there was a break in the cascade until Mary decided to mentor Winifred. Two alpha mentorees in Web 4B also set out to help new beta-mentorees.

Perceived, acknowledged or deliberate, the mentoring relationships revealed certain commonalities which made them effective for the participants. These included, among others, commitment to environmental education, sound knowledge base, availability, trust, friendship, leadership style, willingness to share experiences and contacts, allowing autonomy, and, for many, reciprocity.

Evolution of an effective mentoring relationship

According to their self-reported histories, all of the people described in the records began at different places on a continuum of career progress and philosophical development when they met their mentors. Some were students, but with an already developed sense of ethics. Some were practitioners with only a burgeoning awareness of environmental education. Some were near leadership and already into the action phase

Table 5.7 Schematic of participants in all Cases and Records

Hyper Mentor						*Aldo*	*Ernie*	*Grant*								
Supra Mentor				*Prof U*	*Orin*	Paul	Gary	Robert				*Isaac*			Charles	
Prime /Pivotal Mentor	Bob	Glen	Barb	Dr. Gordon	Ivo	Cem	Ken	Carol				James			Jack	
Alpha Mentoree	John	Wendy	Ed	Richard	Sally	Ann	Liz	Patty		Mary		Heather	Jill	Brad	Dave	Sue
Beta Mentoree									Diane		*Winifred*		Gina	*Randy*		*Colleen*
Case /Record	1A	1B	1C	2A	2B	3A	3B	3C		4A1		4A2	4A3	4B2	4B1	4B3
PAIRS				TRIADS		CHAINS			WEBS							

so necessary in this field.

The mentoring relationship began inside the two outer dimensions of career progress and philosophical development. All mentoring pairs had to have an initiation of the relationship most of which were informal and serendipitous. A few, however, happened in a more formal setting and a couple of the mentorees actually sought out their mentor.

As greater support was given through encouragement, trust, respect and integrity, the relationship moved towards a deep personal friendship. A couple of these friendships were sorely tested due to professional stresses, but managed to survive after a re-evaluation of the long term merits of the relationship.

Developing alongside the personal relationship was a professional alliance with the mentor. No matter their age, nor their previous experience, the mentoree began as a novice, someone willing to learn from the mentor in an atmosphere of integrity and respect. By assimilating knowledge, reflecting on attitudes, and by using the increased opportunities and networks from the mentor, the mentoree grew to the status of colleague, one who works in the same area, or co-lateral peer if they moved off into their own area.

When a relationship has been sustained for a number of years, the mentoring pair may see each other as equals and in a few cases the mentoring is reciprocated This may happen at the point when both people are leaders, close friends, and their philosophy inspires action for the environment. The mentoree may have information about new programs or different contacts to share with the mentor. The mentors themselves may move into a career transition stage or become a 'novice' in a new area of environmental education that is better known by the mentoree. If this happens, the mentoring process can seen as reciprocated for a continuing personal and professional alliance.

Four propositions for mentoring in environmental education

Strauss and Corbin (1990: 129) argue that one can 'validate' a grounded theory study by writing hypothetical statements regarding relationships among the categories discovered which hold up in case after case. In summarising the data from the fifteen records which have been presented in the four cases, four propositions can be offered for mentoring in the broad field of environmental education.

1. CAREER PROGRESS - The mentor can be effective at any time in the career progress of a mentoree as they transition from student to practitioner to leader.
2. PERSONAL RELATIONSHIP - Career progress of the mentoree can be enriched by an increased personal relationship with the mentor who is seen first as an acquaintance, then used as a supporter, and may become a friend.
3. PROFESSIONAL ALLIANCE - Acknowledged and deliberate mentoring can help the mentoree grow towards a stronger professional alliance with the mentor while developing his/her own leadership skills.
4. PHILOSOPHICAL DEVELOPMENT - When a mentoring relationship is underpinned by philosophical congruence with the mentor and has both personal and professional dimensions, then the mentoree's career can progress more easily toward environmental education leadership.

In summary, an effective mentoring relationship has been shown to have a positive impact on a leader's professional development in environmental education by allowing him/her to debate and develop a philosophical approach to that career, to grow professionally along side and not subservient to the mentor, and, importantly, to be nurtured personally and sustained as he/she continues to act in a field known for its controversy. A theory of mentoring emerges from the four propositions - when mentoring becomes a deliberate process, a 'cascade of influence' can ensue which will be beneficial for future leaders in environmental education. The understanding of how this theory developed, how the research questions are answered and how the study ties back to the literature is the focus of Chapter Six.

Chapter 6

Simplicity, simplicity, simplicity! I say, let your affairs be as two or three, and not a hundred or a thousand; instead of a million count half a dozen, and keep your accounts on your thumb-nail. *Thoreau, 1854, "Walden or Life in the Woods"*

6.0 Introduction - Answering the Research Questions

Chapter One defined the domain for this research as environmental education. There is a great diversity of positions one can hold in this relatively new field which spreads across education, government and the private sector. Although there is abundant research concerning the goals, philosophy and content for environmental education, there is a paucity of information regarding leaders who actually engage in educational pursuits.

The preliminary literature review suggested that significant life experiences such as childhood activities or loss of special places were reasons why conservation leaders initially developed their concerns for the environment (Tanner, 1980). Peterson and Hungerford (1981) found that having environmentally conscious teachers and other role models also affected environmental sensitivity. Newhouse (1990: 31) identified four factors which have a positive influence on environmentally responsible behaviour, including an internal locus of control, a strong sense of responsibility, a solid understanding of the issues and action strategies, and a positive attitude. By looking further at the formative experiences of environmental educators, Palmer (1993) analysed why people chose to teach about the environment. However, none of these sources established the practice of mentoring as a factor for either attracting people to the field, influencing their behaviour or supporting them as they became leaders of environmental education.

Additional literature related directly to environmental leadership suggested the possible efficacy of mentoring (Langton, 1984; Beeler, 1988; Snow, 1992a, b; Berry and Gordon, 1993). However, only one article was based on a research interview (Udall, 1986). Therefore, the findings of this study now extend this research by providing insights into the following questions:

1. Have leaders been mentored at some time during their involvement with environmental education?
2. What has been the timing and duration of the mentoring process?
3. What is the effectiveness of the mentoring relationship?
4. Is there any 'cascade' or continuation of the mentoring process?

In order to focus these questions, Chapter Two provided an extensive literature review and identified four themes. Firstly, definitions of environmental education continue to evolve (Fien, 1988); secondly, there is a wide continuum of perspectives people espouse toward environmental education (Clayton, 1982); thirdly, there is a great variation in volunteer and career positions people hold in this broad field (Snow, 1992) and, fourthly, the type of leadership preferred for environmental education is one of shared leadership. These literature findings were important to this study because the respondents to the survey and the participants in the interviews mirrored these four issues. They described the evolution of the term environmental education over the decades. Their views toward environmental education could be placed on a continuum from scientific to geographic perspectives. Their various positions were either voluntary or paid and most spoke of a preference for a shared leadership style (Carter, 1993).

The literature findings regarding a general understanding of mentoring (Shea, 1992), the characteristics of mentors and mentorees (Segerman-Peck, 1991), and how relationships developed (Kram, 1983) were found to be similar to the relationships described in this study. However, when mentoring was then examined in relation to leadership and more finely as it applied to leaders in environmental education, several discrepancies with the literature were found. There were no hostile endings reported (Levinson *et al.*, 1978) although there were instances of 'rupture and repair', nor was the need promulgated for the protégé to outstrip the mentor (Gray, 1989 in Carruthers 1993). The lengths of most of the relationships in this study were far longer than those reported in the literature (Shandley, 1989; Donovan, 1990), many of them lasting over twenty years.

An examination of the literature regarding professional development within the field of environmental education exposed past training initiatives which were ineffectual (Sakhofs, 1987; Steinhart, 1990; Magill, 1992), yet methods were suggested by which mentoring might provide different opportunities in the future (Teshner and Wolter, 1984; Berry and Gordon, 1993). These ideas were confirmed by the participants who added ideas on exactly how this should be undertaken, especially regarding the mentoring of future leaders in environmental education.

Overall, the literature review in Chapter Two established a theoretical framework for the development of an appropriate methodology described in Chapter Three. A survey instrument was designed and distributed to identified leaders. Analysis of the data from the questionnaire led to the identification of the leaders and their mentors with whom semi-structured interviews were conducted. The original framework of the study was broadened (Tesch, 1989) and further interviews were able to be held with the mentors' mentors and new mentorees.

Using a grounded theory approach (Strauss and Corbin 1990), the qualitative data from the questionnaire and interviews was checked and cross-checked as ideas emerged and evolved into the core category of 'a cascade of influence'. The use of the qualitative data analysis computer program, NUD.IST, was particularly helpful in the analysis.

Chapter Four provided interpretations of the data from the survey in four ways. Firstly, mega-categories were described concerning the initiation and development of the leaders' interest in environmental education. These distinguished various attributes for those leaders such as personal attitudes, environmental ethics and leadership style. Secondly, it described the philosophical beliefs of leaders and looked at how they developed their beliefs and dealt with others to convey both their knowledge and attitudes, particularly through the use of a participatory leadership style.

Thirdly, Chapter Four explained the leaders' stances towards the idea of hierarchy in environmental education. Over sixty percent of the respondents agreed that leadership in environmental education is not hierarchical. The idea of hierarchy *per se* was seen as antithetical to the goals of environmental education. Yet it was recognised that, from a managerial stance, there are instances of organisational decision-making which are more easily dealt within an established hierarchy.

These views towards hierarchy paved the way for understanding how a mentoring program might be seen as a future aid to the professional development of leaders. If the field were to be considered as hierarchical, then the business, teaching, nursing, and academic models of formal mentoring might be useful. If the field was not seen as hierarchical, then informal mentoring might be more appropriate. If the field were to contain elements of both process and organisation, then informal situations might be best for interested people to meet and 'join the club'. In more contrived mentoring settings, prospective mentors could be given useful training to fulfil their responsibilities. These ideas were explored during the interviews when the participants offered their ideas on possible scenarios for future mentoring. These findings are discussed further in Section 6.5.2.

Fourthly, survey respondents gave similar definitions of mentoring as those obtained from the general literature, but importantly they were able to distinguish characteristics of an environmental education mentor such as having an environmental ethic, needing a broad-based environmental knowledge, exhibiting a commitment to the field and living out their principles. They described the benefits of becoming an environmental education mentor and what benefits might accrue to a new mentoree. Those respondents who went on to describe their own mentoring relationships were able to delineate its initiation, development and sustainment and to explain the effectiveness of the mentoring for both their personal lives and their careers.

Chapter Five reported the narrative stories of participants who were mentorees, mentorees/mentors or mentors. These were further classified by the researcher's construct of terms (beta-mentoree to hyper mentor). Four cases were organised around pairs, triads, chains and webs of established mentoring relationships with each case including several records. Comparisons across records within a case and across cases were possible. The results summarised by four propositions regarding mentoring relationships have both personal and professional aspects. The cultivation of the relationship is discussed in tandem with the leader's career progress and philosophical development. These propositions argue that an effective mentoring relationship has a positive impact on a leader's career in environmental education allowing him/her to debate and develop a philosophical approach to that career, to grow professionally along side, and not subservient to, the mentor, and, importantly, to be personally nurtured and sustained as he/she continues to act in a field known for its controversy.

The purpose of Chapter Six is twofold. Firstly, it will answer the questions posed at the beginning of the study regarding the mentoring experiences of leaders in environmental education. The process of mentoring sketched by the survey respondents was fully described during the interviews of the original leader participants. In addition, these experiences were triangulated by those mentors, the mentors' mentors and new mentorees who were also able to be interviewed. Therefore, in Chapter Six all of the above people will be referred to collectively as 'the subjects' of the study. Secondly, Chapter Six will confirm, deny, or extend the findings in the literature thereby adding to the theory of mentoring for environmental education leaders. The core concept, called 'the cascade of influence', will be explained and implications for professional development will be explored.

6.1 The Mentoring of Leaders in Environmental Education

Mentor diversity across the field of environmental education

The first research question asked if leaders had been mentored at some time during their involvement with environmental education. In this study two-thirds of the leaders had experienced a significant mentoring relationship during their involvement with environmental education. Interestingly, not only the leaders, but also the mentors, held diverse positions across the broad field of environmental education (Basta, 1991; Holland *et al.*, 1992; Warner, 1992; Smith-Sebasto, 1993; Janse van Rensburg, 1994; Smyth, 1995). The majority of the mentors held positions of responsibility and yet in only two instances were they in a direct supervisory role of the mentorees. Exceptions to this pattern were the designation of familial mentors such as fathers and grandfathers. These self-reported leadership roles include work at local, state and national levels such as project directors, policy advisers, consultants and officers of environmental organisations (refer to T*able 3.4*).

Traditionally male mentors

In this study, gender was reported to be irrelevant, but the subjects confirmed that sometimes circumstances and contexts determined this factor. Most of the mentors reported were male and from a similar cultural background. This is consistent with the literature in other fields such as nursing and business (Vance, 1982; Limerick, Heywood & Daws, 1994).

The basis for the attraction between mentoring pairs included a philosophical congruence regarding their world-views towards the environment and a complementarity of leadership skills. Also the distinction between mental and physical attraction has to be pointed out as current literature suggests that some men may be avoiding mentoring situations for fear of being misinterpreted in their intentions (Phillip-Jones, 1982; Kram, 1984; Bowen, 1985; Arnold and Davidson, 1990; Burke and McKeen, 1990; Shea 1992). This was not reported to be a problem for the subjects in this study.

Female mentors/mentorees are on the increase

In this study, there were four examples of women designated as mentors by males. One woman was older, one was the same age and two were younger than their mentorees. All of the women were in positions of responsibility, but not in direct hierarchical relationship to the men. This finding contrasts with the literature which revealed a scarcity of female mentors in traditionally male-dominated career fields. Also it counters the idea that those female mentors who might mentor male protégés would necessarily require a high degree of position and career security (Hunt and Michael, 1982; Limerick *et al..*, 1994).

Like Cochran-Smith and Paris (1992), this study found that cross-gender mentoring involved a natural and long-standing affinity, was mutual and comprehensive and had both professional and personal aspects for the mentoree and the mentor. It also revealed an expanding pattern in the number of female mentors and mentorees as shown in *Table 6.1.*

Table 6.1 Gender patterns found in this study.

Hyper Mentor						*M*	M	M								
Supra Mentor				*M*	*M*	M	M	M				*M*			M	
Prime /Pivotal Mentor	M	M	**F**	M	M	M	M	**F**				M			M	
Alpha Mentoree	M	**F**	M	M	**F**	**F**	**F**	**F**		**F**		**F**	**F**	M	M	**F**
Beta Mentoree									**F**		***F***		**F**	*M*		***F***
Case /Record	1A	1B	1C	2A	2B	3A	3B	3C		4A2		4A1	4A3	4B1	4B2	4B3
	PAIRS			TRIADS		CHAINS			WEBS							

This contrasts with early mentoring research where Hennig and Jardim (1977) found that top level business women executives had almost exclusively male mentors who were also their bosses. Others found that successful female executives had supportive male mentors early in their career (Hennig, 1971), sought them out much like young adult males (Stewart, 1976) and had a power-dependency relationship (Shapiro *et al.*, 1978). That type of finding led women researchers (Kram, 1983; Bowen, 1985; Noe, 1988; Heywood, 1992; Limerick, 1992) to criticise the fact that mentoring was conceptualised as arising out of male experience within hierarchical organisations.

This study has revealed female mentoring experiences in both formal and informal settings. Six out of the fourteen female mentorees were described or described themselves as having low self-esteem when they first broke into the male enclave of environmental educators, but it was believed that this would change as they had a greater chance to express themselves. *Figure 6.1* presents a gender based typology of mentor-protégé relationships found in this study which has been adapted from

The Number of Various Gender Relationships from this Study

		Gender of Protégé	
		Male	Female
Gender of Mentor	Male	Cell 1 13	Cell 2 8
	Female	Cell 3 4	Cell 4 7

Figure 6.1 A gender typology from this study adapted from Shapiro *et al.*, 1978.

Shapiro *et al.* (1978). The responses generated from the males and females were highly similar in most dimensions of the relationships and this confirms the findings of Gordon (1983). Importantly, the examples of mentoring by and for females revealed in this study is seen as a hopeful sign for the future professional development of environmental education leaders.

Mentors can come at any age

The age of the mentor was not a relevant factor in this study. Almost half of the subjects affirmed that their mentors were younger, the same age or less than five years older. There were examples of younger male mentors to older female mentorees, older male mentorees to younger female mentors and contemporaries. This contrasts with age patterns found in nursing, business and educational settings.

Other considerations

Cultural background was not found to be a significant issue for the mentoring relationships. Instead, personal characteristics such as respect, trust, guidance, compassion, well-grounded environmental knowledge and an environmentally sound lifestyle were seen as very important. A strong philosophical bonding with the mentors regarding environmental education was seen as a more important consideration than gender, age, culture or status.

6.2 The Process of Mentoring Experiences

The second research question asked about the timing and duration of the mentoring process. Mentoring relationships were found to begin at any stage of career development. This study has important examples of late career mentoring which contrast with the idea of Levinson *et al.* (1978) who said that after about age forty, men have outgrown the readiness to be the protégé of an older person and rarely have mentors themselves. Instead, this study reinforced the findings of Roche (1979) who reported that a quarter of his sample became protégés during the second decade of their career.

An important feature of this research is the number of people who found their mentor during mid and late-career stages. This differs from the general literature on mentoring which speaks mostly of young protégés in their early career (Benner, 1984; Bova, 1987; Heywood, 1988; Arnold and Davidson, 1990; Daloz Parks, 1993).

Being a Mentoree at any age

Daloz (1986) pointed out that mentorees are not always novices in every area, but if they are on a new journey then mentoring may have less to do with helping them 'grow up' than with their 'development of identity'. Likewise, mentoring may be applicable to people who are already competent in one field and find a mentor who opens up a new professional direction for them. Zagumny (1993) addressed part of this issue when writing about mentoring as a tool for change. Mentors have typically achieved 'more' or something different than the mentoree, but knowledge alone does not encompass all aspects of the mentoring relationship. Several subjects in this study were older 'novices', some were men, others women; some from science, others from geography. Yet, they all indicated their willingness to learn something new from their respective mentors.

The data in this study points to differences from other career settings. No matter the age of the mentoree, the subjects stressed the importance of a philosophical congruence about environmental education rather than age or position as important to their mentoring relationship. This finding is more in line with recent ideas that no matter when one becomes a protégé, "mentoring is a powerful system for making progress" (Segerman-Peck 1991: 13).

6.2.1 Autobiographical Context

Before one can become a leader in a field there has to be a certain affinity for that area. Daloz (1986) reminded researchers that it is *better* to see human beings as wholes rather than isolated minds. The autobiographical sketches given by both mentorees and mentors revealed some details about what initiated and developed their interest in environmental education and how the influence of the mentoring relationship affected their work in that field. A process of 'ecological autobiography' (Paschal, 1960; Krall, 1988; Wilson, 1995) was evidenced in this study as the subjects disclosed part of their 'spiritual identity'. They ventured, remembered, comprehended, embodied and restored their memories regarding their experiences of environmental education.

6.2.1.1 Student Awareness of the Environment

Without being directed to use the exact process described by Wilson (1995), the subjects did 'venture' to reflect on nature-related experiences which they recalled as 'vivid memories', e.g. a small frog, a flower, a special beach or canal, an old mill. Over three-quarters of the subjects developed their environmental concerns from a childhood love of nature and the outdoors, followed by years of broadening their knowledge-base both formally and informally. These findings are consistent with the influences identified by Tanner (1980) who found that most of his respondents cited youthful experiences in pristine environments as being significant in founding and developing their lifelong conservation interests. This study also confirms the research carried out by Palmer (1993) when the subjects emphasised out-of-doors experiences which usually began in a family setting and then moved outward to other significant adults such as scout leaders. Exceptions to this pattern were two subjects drawn to the field of environmental education through social justice and history backgrounds.

As the subjects matured, their sphere of influence became wider and for some fortunate individuals included 'environmentally conscious teachers' at upper primary and secondary levels. One person mentioned that her primary teacher took the class on school excursions to an old mill. This example encouraged her to take students on fieldtrips when she became a teacher. As older students, the subjects tended to recall certain teachers and high school experiences which made a lasting impression. Field experiences were paramount in sensitising them towards careers in environmental education.

University courses began to play a large part, particularly field-based courses in biology and geography. After the late seventies, courses like conservation and ecology were cited. Several people mentioned having to design their own university programs to accommodate their areas of interest in environmental studies. University professors played an important role not only by increasing knowledge, but by inculcating values and discussing ethical issues; some became mentors. Other attractants to environmental education were books, travel, social justice issues and various project networks such as *Project WILD* and *Landcare*.

The mentoring stories in Chapter 5 corroborated the findings of Peterson and Hungerford (1981) who concluded from their interviews with professional environmental educators that environmental sensitivity usually involved 1) experiences which are long-term, 2) out-of door activities, 3) visits to natural areas, 4) role models, 5) familial sensitivity, and 6) occurred before the age of nineteen. Importantly, this study extended their research by moving beyond the notion of role models to the understanding of mentors and their effect on professional environmental educators. It also established that only a few subjects mentioned meeting their mentor during their student days and usually that was at university level.

6.2.1.2 Practitioners with a Developing Ethical Stance

The subjects of this study also reported that a significant time to meet their mentors was primarily, but not exclusively, early in their career The autobiographical method again helped mentors and mentorees to 'remember' their ecological history when they were beginning practitioners. The subjects were able to select experiences from the past and to reflect on them critically (Wilson, 1995). They recalled how they were still developing an ethical stance and how the developing relationships with their mentors influenced them personally, professionally and philosophically. For example, Sally learned to identify prairie grasses with her mentor, Ivo, and teaches that skill to her students today. Ken smelled the ponderosa pine with Gary and later explained how significant this was to his new mentoree, Liz. Paul read the early draft of Aldo's famous book and told Cem about its impact on him; and Jack discussed knowledge and philosophy with Charles while on fieldtrips to Great Barrier Reef islands.

Krall (1988) felt that this stage of autobiography allows us to interpret and surpass our own histories. Both mentors and mentorees evaluated more than their individual experiences of nature. They spoke of their increased dedication to environmental education, the importance of fieldwork, and the need for a balance between scientific fact and social issues. They also grappled with the meaning of mentoring - how being in the field with their mentor changed the relationship from professional to personal, how they admired or challenged the mentor regarding living an environmental lifestyle, how they acknowledged the mentor's influence, how they built a mutual trust, and how they moved to a level of collegiality.

The 'comprehending' stage, according to Wilson (1995), involves a search for the major propositions about one's beliefs and an identification of recurrent themes in one's experience. The subjects in this study were able to chart the progress of their careers and intertwine that with their mentoring relationships. Despite periods of dormancy and reactivation and, in a few instances, rupture and repair, the subjects continued discussion of their environmental philosophy with their mentors which helped them to evaluate their ethical stance toward environmental education and encouraged them to pursue their leadership activities.

They reflected on the personality traits of their mentor or their mentoree as one who could "talk the talk and walk the walk" and not be "an armchair theorist"; there was a need to "be willing to get your hands dirty and not just direct traffic"; they reiterated that "environmental education is knowledge not just emotion". Some argued for transmittal of environmental information using a "fair presentation of controversial issues", while others spoke from a critical theorist view of "overcoming the dominant social paradigm" in order for change to take place. The mentorees' interests in environmental education developed along three dimensions: personal attitudes, experience and communication.

1. *Personal attitudes* emerged as an important category for continued environmental interest. It broadened outward from family and friends to teachers, role models and mentors.

2. *Experienc*es such as the courses taught and the projects led by these practitioners demonstrated evidence of developing leadership.

3. The need for *communication* with their mentor about an environmental philosophy was evidenced by the mentorees. The mentorees increased their consciousness of global problems and recognised the lack of knowledge by the general public.

Interest in environmental education carried over into the mid-career stage of the subjects. The mentorees' levels of response moved from environmental sensitivity to responsible behaviour. They exhibited characteristics identified by Newhouse (1990: 30) such as: an internal locus of control, a strong sense of responsibility, a solid understanding of the issues and action strategies, and a positive attitude. The need for sound knowledge and the ability to make decisions is evidenced through the self-reported positions of responsibility that mentors currently hold.

Even though the subjects in this study were in many different settings, they saw teaching this relatively new area called environmental education as a challenge. For example, teachers included it in existing curricula, overcoming administrative blocks and resistance to new subject matter. They made sure that the use of field work was valued especially at the school level, but also for pre-service university students. They extended their positive environmental attitudes to community and volunteer groups.

Those in natural resource management agencies also saw environmental education as something which could be integrated into existing programs, but many of them waited until mid-career when their skills were more sure-footed. Some had been involved in environmental education issues to some extent, but became enthusiasts later in their careers when they saw the possibilities for new methods of evaluation and delivery. Several subjects opted out of teaching and natural resources, but not out of their interest in environmental education. They usually consulted with their mentors when they made career transitions to administration, academia, consulting or private business.

6.2.1.3 Leaders for Transformational Action

Most of the subjects gave autobiographical information which explained how they became aware of the environment during their student days, and then developed a more considered ethical stance which they carried into their careers as practitioners. Their environmental ethic was often debated with their mentors and underpinned their career actions as leaders. In connecting leadership to the mentoring relationships, the respondents to the questionnaire had ranked second out of seven that their mentors were 'important to them throughout their careers'. Three-quarters of the leaders felt that their mentors had an extraordinary or significant influence on their personal lives, while six out of ten felt the same regarding their careers. These findings are similar to the patterns discerned by Roche (1979) and demonstrates the commonality of interests in environmental education reported by the mentors and mentorees.

Wilson's (1995) fourth stage of 'ecological autobiography' can be identified as the mentorees reflected on how they were able to 'embody' some of the methods, techniques and skills of their environmental education mentor. It was found that mentorees and mentors shared some common characteristics. They held strong philosophical beliefs which were not so dogmatic as to preclude necessary changes when new information based on scientific evidence was presented. They possessed personal attitudes that showed commitment to the ethics of environmental education coupled with a leadership style that allowed for empowerment and action by others. They displayed a personal concern for others with a humanitarian interest which was dedicated to the education of the 'whole' person - physical, emotional, cognitive, and spiritual. They preferred a shared leadership style over the 'disciple and follower' or 'clone' models and they encouraged development of new skills and commitment from all involved. They fostered the ability to listen and involve many people, to recognise value in others and to organise and delegate authority.

By comparing and integrating the mentors' experiences with their own, the subjects became 'autonomous mentorees' and self-directed leaders. They exhibited certain internal personality attributes such as persistence, consistency and insistence. They were self-motivated, value driven, and solidly grounded in environmental knowledge and committed to education in the broadest sense. They felt the goals of environmental education should be accomplished through cross-discipline, integrated, and interdisciplinary approaches, not only in formal education settings, but in government and community programs which educate *for* the environment. These traits were brought out in the personal stories of the mentors and mentorees as they explained the nature of their work.

Many of the activities demonstrated by the subjects in this study point to some or all of the characteristics of a transformational leader (Roueche, Baker and Rose (1989) in Carraway, 1990). In both the written responses and oral interviews they espoused ideas about the goals and visions of environmental education, the use of 'natural authority' and 'shared leadership', strength in team work, the importance of respect and integrity, and the need to groom followers to take their places. Importantly, they went on to connect their leadership activities to their mentoring experiences. The attributes characterised as necessary for transformational leaders are clearly seen to be the same ones which the subjects described for their mentors and were encouraged in their new mentorees.

The philosophical positions of leaders and their mentors were found to be underpinned by an environmental ethic. This was demonstrated by a value-driven concern about environmental issues leading to an enactment of those values within their lifestyles. Furthermore, they had a 'commitment to the vision', in other words, they had an understanding of the needs of both nature and humans. They reflected upon their own philosophical orientation towards environmental issues and education, such that when they acted in a leadership role, the attributes of fairness, balance and good judgement were mirrored in their leadership style with the understanding that good environmental education is a matter of 'persuasion' and not 'advocacy'.

The fifth stage of ecological autobiography involved 'restoring', that is, developing a final personal statement and articulating a stand on what one now believes and values. The subjects in this study went one step further, however, connecting their leadership to their mentoring experiences. They were able to express their current positions on environmental education, not only in terms of their own careers but also in considering if they could contribute to this field by becoming mentors themselves and by suggesting ways to foster the professional development of future leaders.

Extending ecological autobiography

The data from this research has provided the grounds to extend Wilson's (1995) idea of eco-biography to a sixth step, that of 'cascading'. If one has truly embodied the ideals and actions of environmental leadership through the benefit of mentoring, then it is logical to extend that kind of relationship to someone new. A pattern of continued mentoring was found in this study - a 'cascade of influence' emanating from leaders who developed an environmental ethic which they demonstrated in their personal and professional lives and extended through mentoring to others within the multi-faceted arena of environmental education. The new mentorees came from both scientific and sociological backgrounds, they met their mentors either formally or informally while based in education, government or community positions. The findings of how these mentoring relationships developed are presented in the following sections.

6.2.2 The Mentoring Relationship

The literature suggested that the role of the mentor had not been consistently defined and appeared to overlap with terms like role model, coach and preceptor (Showers, 1985; Byrne, 1989; Shandley, 1989; Donovan, 1990). The subjects of this study, like those of Schmoll (1982), found that mentoring was distinguishable from other types of relationships and, without being prompted, were able to explain the differences. In addition, they explained why they might need more than one mentor for various aspects of their career. Even those who were not yet ready to become mentors affirmed that they understood what the benefits of mentoring would be both for themselves and others.

These subjects understood the concept of mentoring in general and offered some specific ideas regarding what would make an effective environmental education mentor. They advocated that the mentor should have wide educational background, experience and skill-level and understand a variety of viewpoints - educational, scientific, sociological and political.

Kram (1983) explained her ideas regarding the development of mentoring research in terms of phases - initiation, cultivation, separation and redefinition (refer to *Table 2.2*). *Table 6.2.* presents this researcher's expanded phases which categorise the findings of this study. They include: initiation, development, dormancy, reactivation and sustainment. The term 'initiation' indicates the beginning of all of the relationships. The term 'development' was chosen because it encompasses the idea that the relationship can grow in two dimensions - for both the mentor and the mentoree. Some relationships may experience a period of 'dormancy' which describes what happens when a mentor and mentoree do not have frequent contact. In some cases, this

Table 6.2 Phases of mentoring relationships in environmental education (Fortino, 1996 after Kram, 1983).

Phase	Definition	Turning Points
Initiation	A period of time during which the mentor and mentoree meet. It may come at early, mid or late stage in the mentoree's career. It is usually informal in nature and is often not acknowledged.	A spark of interest is noted between the two; follow-up may come from either party; similar areas of interest in environmental education are noted particularly teaching techniques and knowledge base. The mentoree is a 'novice' in that they have new knowledge to learn from the mentor no matter their age or previous experience.
Development	This stage can last between five and ten years The mentor offers support and encouragement for the mentoree to become autonomous.	During this time the mentorees move to new stages of their career. Networks are shared, opportunities offered. Respect and trust is increased sometimes resulting in cooperative projects. Personal friendship develops, often including families.
Dormancy	This stage takes place when there is a period of significant growth on the part of the mentoree often involving a career transition. The mentor's ideas may be challenged and reassessed by the mentoree. There may be periods of rupture and repair due to personal or professional differences.	The mentor is used as a sounding board, advice is sought and often taken. The significance of the relationship is re-evaluated in terms of less constant contact. The professional alliance between the mentoring pair changes and they become colleagues if they work in the same area or as co-lateral peers if they are in different workplaces.
Reactivation	Contact is made after a period of dormancy and the relationship is able to easily 'pick up where it left off'.	Realisation that what made the initial relationship valuable to both parties is still intact. There is still a basic philosophical congruence.
Sustainment	Some relationships last up to twenty-five years with the average being fourteen years. There may be a reciprocity of mentoring with the mentoree offering new information on a professional level and advice and friendship on a personal level.	Mentorees are not seen as clones, but rather as autonomous leaders, Other mentors may fill new needs, but the original mentor is still valued for their philosophical stance toward environmental education. They often consider each other as equals and definitely as friends.

dormancy may begin due to a rupture in the relationship caused by personal or professional differences. However, in this study the two instances of rupture were able to be healed and the relationships re-established. 'Reactivation' encompasses the idea that, despite periods of dormancy, the relationship has never lost its original essence and therefore does not need to be redefined. This may be attributed to the shared philosophical approach to environmental education.

All of the relationships in this study exhibited 'sustainment', that is, a long-term maintenance of the relationship between environmental education leaders and their mentors.

6.2.2.1 Initiation - serendipitous happening

An initial attraction between the mentoree and the mentors sparked the beginning of the relationship which was not dependent on a particular career stage. For some, the meeting of the mentor was serendipitous, a 'chance introduction' while they were students. For others, the mentoring began during mid-career. Some subjects explained that they were at stages in their careers where they were 'searching' and the enthusiasm and experience of the mentor helped fill a need. The mentor seemed to have a magnetism and vitality which, coupled with his/her vision of environmental education, was an attraction, while the mentoree revealed a 'spark of enthusiasm'. However, mentor availability and encouragement were necessary aspects for a continuing relationship. Although some aspects of this initiation are the same as in other mentoring situations (Caldwell and Spinks, 1992), the research findings of this study corroborate ideas from the literature that having shared philosophical views are important to the mentoring relationship of environmental educators (Roush, 1992; Gumaer-Ranney, 1992).

6.2.2.2 Development - considered contact

Availability was important to the development of the relationship but it was almost more a state of mind than a physical reality as contact did not need to be on a constant basis. The mentoring pairs reported that even though they met at different frequencies during the formative period, the relationships were seen as effective when bonds of personal compatibility, professional complementarity and philosophical congruence were found between them.

Professional complementarity

Sometimes the mentors and mentorees were in the same workplace by necessity, sometimes by choice, but often they worked in different aspects of the same field, occasionally in different cities and even different countries. Yet despite physical distance, there was often a professional complementarity of experience and skills and they were able to assist one another with projects. Some mentors were university academics who helped the mentorees when they were changing courses or during post-graduate study. The relationships kept developing, helped by an openness and modelling on the part of the mentor, the mentorees' growth in self-confidence and joint outside interests.

As the mentorees became more interested and involved in environmental education, they often realised how knowledgable their mentors were and called on them more often. Topics of discussion between the pairs included the need for environmental education, finding enjoyment in the field, and understanding the philosophy and politics underlying it. The subsequent increase in knowledge sometimes led to a delegation of responsibility from the mentor. The mentor fulfilled all of the eight points suggested by Biel (1986:6-11) as a way to fulfil professional development (Refer to Section 2.4.3.4).

Philosophical congruence

Philosophical grounding was defined by the researcher in Chapter Four as a system of personal beliefs based on self-reflection regarding environmental concerns. One participant suggested that 'philosophical' could also be synonymous with 'vision' and 'ethic', a view that matches Aldo Leopold (1949). The data from the survey indicated that eighty percent of the respondents agreed that leaders needed strong philosophical beliefs when acting as leaders in environment education.

Testimony from the interviews exemplified that mentors and mentorees do have a philosophical congruence, that is, they share a similar system of principles, attitudes and values about environmental education. For example, for some mentoring pairs it was a matter of having common perceptions such as love of the sea, respect for environmental ideas, common belief in conservation and teaching environmental education. Some mentors were credited with being an 'inspiration' or a 'profound influence' and passing on their 'philosophical ideals about environmental education'. Mentors were felt to have changed or enhanced attitudes already seeded in the mentorees' personal backgrounds.

Having a similar belief system seemed to be a forerunner to gaining mutual respect for one another. And yet, the subjects advocated that philosophical beliefs should be underpinned not by emotion but with scientific knowledge and sociological understanding. The discussion about how far one was prepared to compromise their philosophy suggested developmental aspects of mentoring relationships. In summary, the subjects felt that both mentors and mentorees should understand and reflect upon their own philosophical orientation to environmental issues and towards education.

6.2.2.3 Rupture and repair - the art of reconciliation

Two instances of rupture to the mentoring relationships were reported in this study. In both instances the mentor and mentoree triangulated the information about this event in their separate interviews. One instance dealt with the mentoree being promoted over the mentor. That rupture lasted over one year, but was repaired when both parties realised the depth of their personal friendship and that their professional skills were more compatible than competitive. The second example was based on a philosophical rupture during a joint project. Both parties admitted to having 'volatile' personalities. They later mended the rupture to the extent that they supported one another during personal illnesses. Today they work together on selected projects, and although the mentoring relationship is characterised as a 'bit more cautious', they are both willing to accept advice and reciprocal mentoring from one another when needed.

These findings contrast with the results of Levinson *et al.* (1978) who reported hostile endings to the relationships they studied. Carruthers (1993: 18-19) listed several reasons for the possible break-up of a mentoring relationships: intimacy leading to acrimony, jealousy of the mentoree's peers, blocking the advances of the protégé, perceived professional intimidation, spouse jealousy and threats from cross-gender mentoring. These factors were not found in this study and may be attributed to the fact that most mentoring in environmental education is informal and non-hierarchical thereby avoiding the pitfalls of business or academic competition. Although personal attraction is evident in cross-gender pairs, philosophical consideration was described as the more important basis for the relationship. Even though, in a few cases, mentors had died, mentorees stated that they still felt that positive influence in their lives.

6.2.2.4 Dormancy and reactivation - out of sight, not out of mind

Many of the mentoring relationships went through periods of dormancy, that is periods of little or no contact due to change in employment, moving, illness and retirement. For some it was only intermittent telephone calls or letters two or three times a year. A few pairs rarely had contact as they were in different countries. One person retired and the pair lost contact for six years, but have begun writing once again. Some were also able to keep tabs on one another through mutual networks or a 'circle of friends'. The subjects had varying opinions on how the reactivated relationships were perceived, citing: little to no change, deeper understanding, less reliance on the mentor, and developing their own vision.

6.2.2.5 Sustainment - congruency, complementarity and reciprocity

This study has concluded that even when career paths veered, a supportive continuation of long-term relationships was possible. This interpretation agrees with the findings of Roche (1979) who reported sustained relationships as 'friendly' and 'close'. It differs from the results of Levinson *et al.* (1978) who observed that an intense mentor relationship can often end with conflict and bad feelings on both sides. Roche had criticised the research by Levinson *et al.* because he felt that they had not considered the intensity of the initial relationship or current feeling about the mentors. These points were taken into account in this study and the data showed that even though the mentorees were encouraged to branch out and develop their own vision, there was still a sustainment of the relationship which, for many, lasted over twenty years. This is an important finding in that it contrasts with the literature especially from business, nursing and education where short term relationships are described and sometimes even encouraged (Shandley, 1989; Donovan, 1990; Caldwell and Carter, 1993).

Reciprocity of mentoring

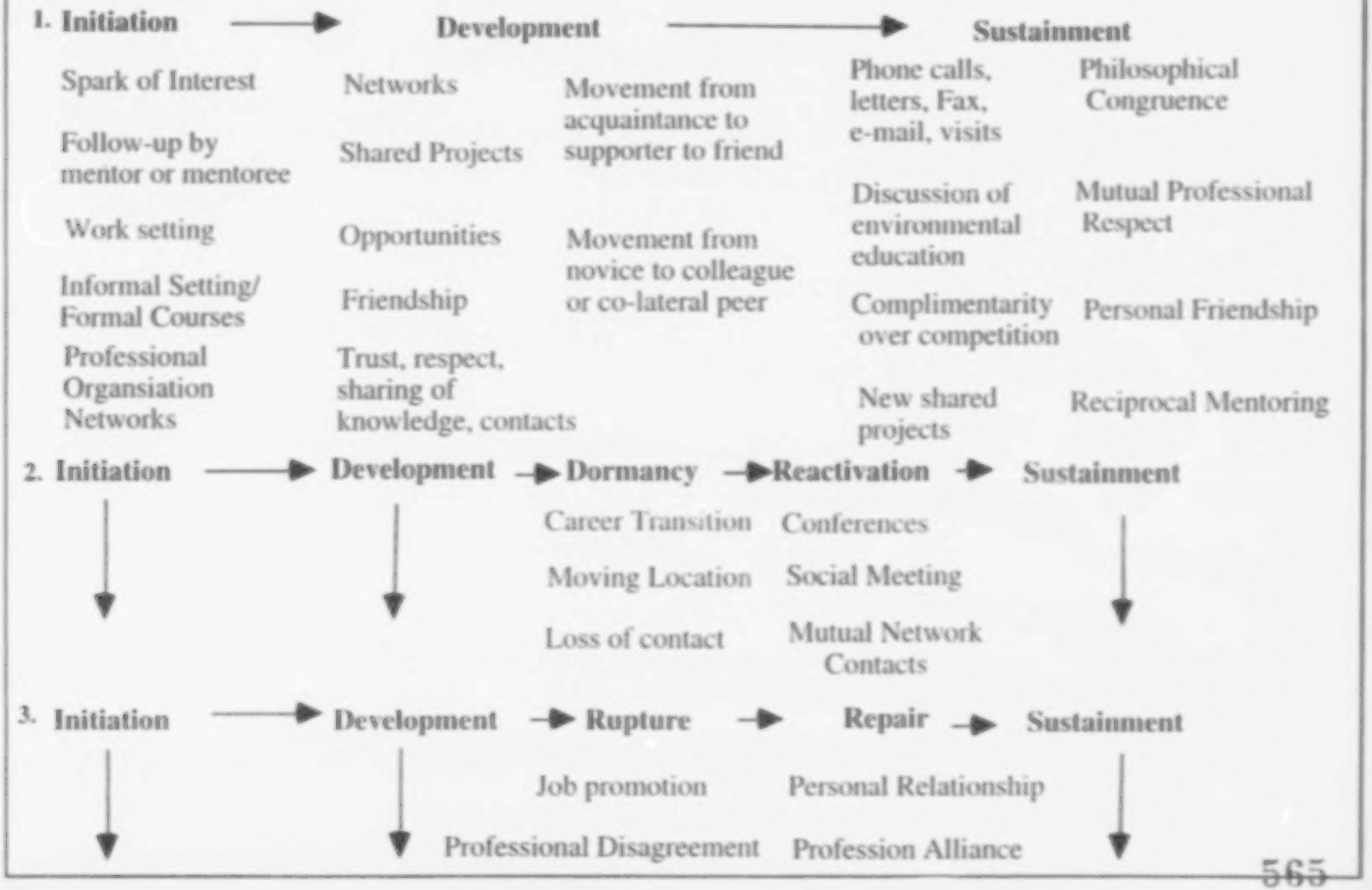
An important finding of this study was the reciprocity of mentoring between the mentor and the mentoree, an idea mentioned in the mentoring literature (Daloz, 1986; Gehrke, 1988; Segerman-Peck, 1991). The essence of this idea is well stated by three subjects who said:

> *I am and will continue to mentor, it's on-going and cyclic. I still have my mentors and I mentor others and even the ones I mentor often re-mentor me.*
>
> *I have probably learned as much from her, if not more, than she has from me. If anything, I would say she has really mentored me rather than I have mentored her.*
>
> *Our fifteen year relationship is reciprocal.*

What is important in these long-term relationships is that they have moved from being vertical (mentor passed down to mentoree) to horizontal (mentoree across to mentor). Rather than becoming static, they continued to grow and change. The mentoree could return professional advice, new information and continued friendship to the mentor on a equal basis. Again this research establishes that even when the mentors and mentorees felt that they became 'equals', there was no need to dissolve the mentoring relationship. This finding confirms the research of Daloz (1986: 58) who countered the literature on hostile or indifferent endings of relationships saying that "if the mentor is capable of letting go of that power so that the relationship can be genuinely reciprocal, the odds favour a lasting friendship".

It is not suggested that mentorees necessarily pass through all of these phases in a lock-step progress (Sheehy, 1976). Indeed, three patterns of sustained mentoring relationships seem to emerge most frequently and these are depicted in *Table 6.3*. Firstly, the most frequent type of relationship followed the stages of initiation, development and sustainment where mentorees stayed in touch with their mentors over many years. They reported continuing professional discussions regarding environmental education while their personal relationship grew and, for many, involved becoming family friends.

Table 6.3 Stages of mentoring development in environmental education (Fortino, 1996).


1. Initiation
Development
Sustainment
Spark of Interest
Follow-up by mentor or mentoree
Work setting
Informal Setting/ Formal Courses
Professional Organsiation Networks
Networks
Shared Projects
Opportunities
Friendship
Trust, respect, sharing of knowledge, contacts
Movement from acquaintance to supporter to friend
Movement from novice to colleague or co-lateral peer
Phone calls, letters, Fax, e-mail, visits
Discussion of environmental education
Complimentarity over competition
New shared projects
Philosophical Congruence
Mutual Professional Respect
Personal Friendship
Reciprocal Mentoring
2. Initiation
Development
Dormancy
Reactivation
Sustainment
Career Transition
Moving Location
Loss of contact
Conferences
Social Meeting
Mutual Network Contacts
3. Initiation
Development
Rupture
Repair
Sustainment
Job promotion
Professional Disagreement
Personal Relationship
Profession Alliance

Secondly, some relationships included a period of dormancy and then reactivation which was often caused by circumstances outside the control of the mentoring pair. This could include job change, travel and changes in personal circumstances. When the pair made contact again, the relationships picked up easily and continued for a long time. Sometimes there was a different level of maturity in the resumed relationship consistent with the broadening experiences and growing expertise of the mentoree. Thirdly, a rupture developed for some mentoring pairs due to personal or philosophical differences. These relationships were able to be repaired by goodwill and effort on both sides and continue to be sustained at this time. In summary, the duration and length of the sustained mentoring relationships in this research is an important difference from the general literature. Participants attributed this finding to their shared philosophical outlook on the importance of environmental education.

6.3 The Effectiveness of Mentoring Relationships in Environmental Education

The third research question sought answers concerning the effectiveness of the mentoring relationship. In accordance with Strauss and Corbin's (1990) concept of 'fit', the subjects' idea of 'effectiveness of the relationship' was faithfully recorded as it pertained to their own reality. The data was grounded in their perceptions of reality by carefully analysing the open comments of the questionnaire and the interview transcripts of mentors and mentorees. Subjects were quite definite in what they felt made an effective relationship and stressed that it had to include personal and professional dimensions.

6.3.1 Personal and professional influence of the mentor

Levinson *et al.* (1978), Roche (1979), Beeler (1988), Segerman-Peck (1991) Limerick (1992) and Carruthers (1993) suggested characteristics for an effective mentor such as: being a good listener, showing a willingness to spend time, giving a sense of confidence, building enthusiasm, having patience, demonstrating very high standards, gaining respect from peers, knowing the politics of an organisation's paths to advancement and sharing acceptable methods for attaining visibility. This study discovered that mentors chosen by leaders in environmental education shared these same characteristics and were willing to fulfil the roles and functions of a mentor thereby providing a positive experience for the mentoree. Like Schmoll (1982), the study found that the relationship contributed to the personal and professional growth of both mentor and mentoree.

However, this research identified special characteristics needed by environmental education mentors previously identified in Section 4.5. The findings included: having a broad-based knowledge in natural and social sciences, feeling strongly about environmental issues, living an environmentally conscious lifestyle, inspiring others to take environmental action, showing achievement in environmental education, being aware of future environmental challenges, being accountable for their actions, and dealing with ethical questions and political beliefs.

6.3.2 Four propositions regarding the effectiveness of the relationships

Analysing the mentoring relationships for these leaders and for the mentors' mentors and the new mentorees was like trying to unravel the patterns from different pieces of macramé. If there are four basic colours of thread which come in different thicknesses and can be intertwined in any order and then knotted at different places along the strands, the results, although having similar elements can end up having quite different patterns. In this study the four basic 'colours' were 1) career progress, 2) personal relationship, 3) professional alliance and 4) philosophical development. The importance of each part or 'thickness of the thread' varied. For some, as with Pattyanne and Carol, the personal relationship was the most important; for others, like Brad and Jack, it was the mentor's influence on the career . For some, like Bob and John, the professional relationship came before the personal, and for others, such as Liz and Ken, the philosophical development was heavily shaped by the mentor. How these threads were intertwined depended a great deal on individual circumstances.

Both the survey and the interview data provided evidence that the four strands are intertwined for each pair during a mentoring relationship. Because of this simultaneity, four propositions were established regarding the mentoring experience. Firstly, the mentor can be effective at any time in the career progress of a mentoree during the transition from student to practitioner to leader. Secondly, the potential leader's career progress is enriched by an increased personal relationship with the mentor who is seen initially as an acquaintance, then as a supporter, and finally may become a close friend. Thirdly, perceived, acknowledged or deliberate mentoring can help the mentoree move from novice status to that of colleague or co-lateral peer and eventually toward professional equality with the mentor. Fourthly, a strong philosophical congruence regarding attitudes, ethics and action for environmental education underpins the personal and professional dimensions of the relationship and this can spur the mentoree toward environmental education leadership.

Although other researchers have studied the first three 'colours' of these relationships - career progress (Hunt and Michael, 1982; Bova 1987), personal relationships (Baird, 1993; Shea, 1992; Severson, 1994), and professional alliance (Segerman-Peck, 1991; Limerick *et al.*, 1992; Matzek 1995), little effort has been focused on the philosophical development of the mentoring pairs. This research has extended the 'macramé' of previous studies by documenting the importance of this philosophical congruence between the mentoree and the mentor.

6.3.2.1 Influencing the career progress

Initiation of the relationship - informal meeting

Most of the mentoring pairs met in an informal, but professional setting - a student taking a class from a professor, a practising teacher and a visiting academic, an aquatic biologist and an enthusiastic teacher. Several were work-related meetings - interns at nature centres or natural resource agencies, a new academic being accepted as a team member, a new employee trying to make her information more accessible to visiting students.

As reflected in the literature (Udall, 1986; Beeler, 1988; Biel, 1988; Crowfoot, 1992; Gumaer-Ranney, 1992), the experience of having a mentor can make one a better practitioner of environmental education. Sometimes the mentor is able to assist in the career path by substantiating the mentoree's choice or providing new opportunities which, in some cases, may result in a new career path. The mentoring relationship was seen to have influenced the leadership choices of these environmental educators by helping them focus their goals, channel their

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leadership, model the mentors, and sometimes use the mentor as referee when applying for a leadership position.

The mentor's approval and ability to bolster the mentoree's self-confidence can sometimes result in the mentoree making new or enhanced career changes even if the mentor could not influence the selection process. If the mentoree's sense of self-efficacy is raised, that confidence spilled over into his/her professional career. This was seen in cases like that of Ann who felt that her mentor, Cem, understood her sense of integrity when he urged her to leave the job as a naturalist intern and make a career transition to teaching. This move eventually led to her role as an environmental leader.

6.3.2.2 Building a personal relationship

Personal compatibility

As in much of the mentoring literature (Moore, 1982; Darling, 1984; Shandley, 1989), an initial spark of personal affinity was sensed by both parties. This was followed with recognition of special characteristics of the mentor such as skills, knowledge, values, attitudes and high standards relating to environmental education and, importantly, availability. Concurrently, the mentor noted characteristics of the potential mentoree such as 'a fire in the belly', enthusiasm and ability. As the personal relationship developed, the mentors exerted a personal influence on the mentorees through their friendship, encouragement and guidance. Mentorees reported that the personal relationship shaped some of their life attitudes and gave them mental strength to withstand personal and professional adversity.

Interest in each other's personal lives was important and it was found that subjects discuss family, friends and significant others. The mentoring pair often shared leisure pursuits such as going to dinners and plays, or partaking in various outdoor recreation or socio-political activities. One respondent summed up this personal compatibility by reflecting:

> *Just knowing someone cares and is concerned about you personally can make the world of difference in how you feel about yourself.*

6.3.2.3 Developing the professional alliance

The professional alliance between mentor and mentoree was pointed out in several interviews. Adopting the notion of theoretical sensitivity, Corbin and Strauss (1990) suggested that data be rechecked against the literature. The list of mentor characteristics identified from the work of Segerman-Peck (1991) was compared against the primary data in this study and several categories found in common with this study were:

1. delegated more responsibility to me;
2. opened opportunities for me to work outside my normal job;
3. increased my access to resources;
4. removed barriers with employers to allow for new opportunities;
5. introduced me to a wider network; and
6. provided travel opportunities in relationship to my career.

Subjects reported feeling that their professional alliance started in a learning mode, but grew to a stage of sharing and, for some, became equal. One person described this combined effort as 'synergistic'. By modelling the mentors' techniques, the mentorees developed a greater diversity of approaches for environmental education. Some were able to spin off and create new programs with the encouragement of the mentor. This is the kind of activity advocated in the environmental leadership literature (Roush, 1992; Berry and Gordon, 1993). One respondent summarised the essence of this alliance reflecting, "my mentor was always supportive and complimentary of my work and achievements even if they were different from what he might have done".

6.3.2.4 Enhancing philosophical development

The review of literature showed little evidence of research on discovering a philosophical congruence between the mentor and the mentoree. Dougan (1986) showed that the strongest personal bonds seem to occur when there was a commonality in philosophical position and practical interests between the academic mentor and the mentoree. Shea (1992: v) hinted at this need for business when he wrote, "there is a new form of mentoring evolving that better suits the downsized, high-tech, globally competitive firms that are emerging in our society. The concept of mentoring is no longer tailored to the tall hierarchical organisations, an old milieu which was paternalistic and nurtured the *status quo*".

This study had found that a different definition of mentoring is needed for environmental education, one which involves a philosophical approach (Langton, 1984; Sakofs, 1987) to personal and professional development and leads to transformational leadership. Snow (1992a: 42) emphasised that "It is the ethic - not careerism or the quest for power or the desire to use environmental issues as a means to effect broad political change - that lead [the conservation professional and volunteer] into his work and continues to refresh him".

Gray (1989) described a model of protégé growth (refer to *Figure 2.4*, p. 61) showing that the mentor can become unnecessary as the mentoree advances in knowledge and skill. A finding from this study contrasts with this idea of mentor disposability. One participant, Cem, suggested a more appropriate image based on 'fat and skinny arrows'. He reasoned that the primary goal of mentoring is eventually to equalise the arrows through mentoree growth which can occur when the knowledge, awareness and inspiration of the mentor is brought to bear on environmental problems and the mentor's achievements and techniques are emulated. During this period of development, the mentor also experiences growth. This imagery approximates the overall changes in mentoring relationships reported by many of the mentorees and mentors and may explain their long-term sustainability. In the end, there is not a sense of dominance by the mentor, but, as this study has exemplified, there is a professional alliance based on philosophical congruence. These findings are similar to those of Mellor (1995) who concluded that an effective relationship is characterised by shared values and expectations, open communication, compatibility, flexibility and management with a locus of control progressing from dependency to interdependency.

6.3.3 Synopsis of the mentoring process

Effective mentoring relationships have certain antecedents, processes and consequences which are illustrated in *Figure 6.2*. The antecedents

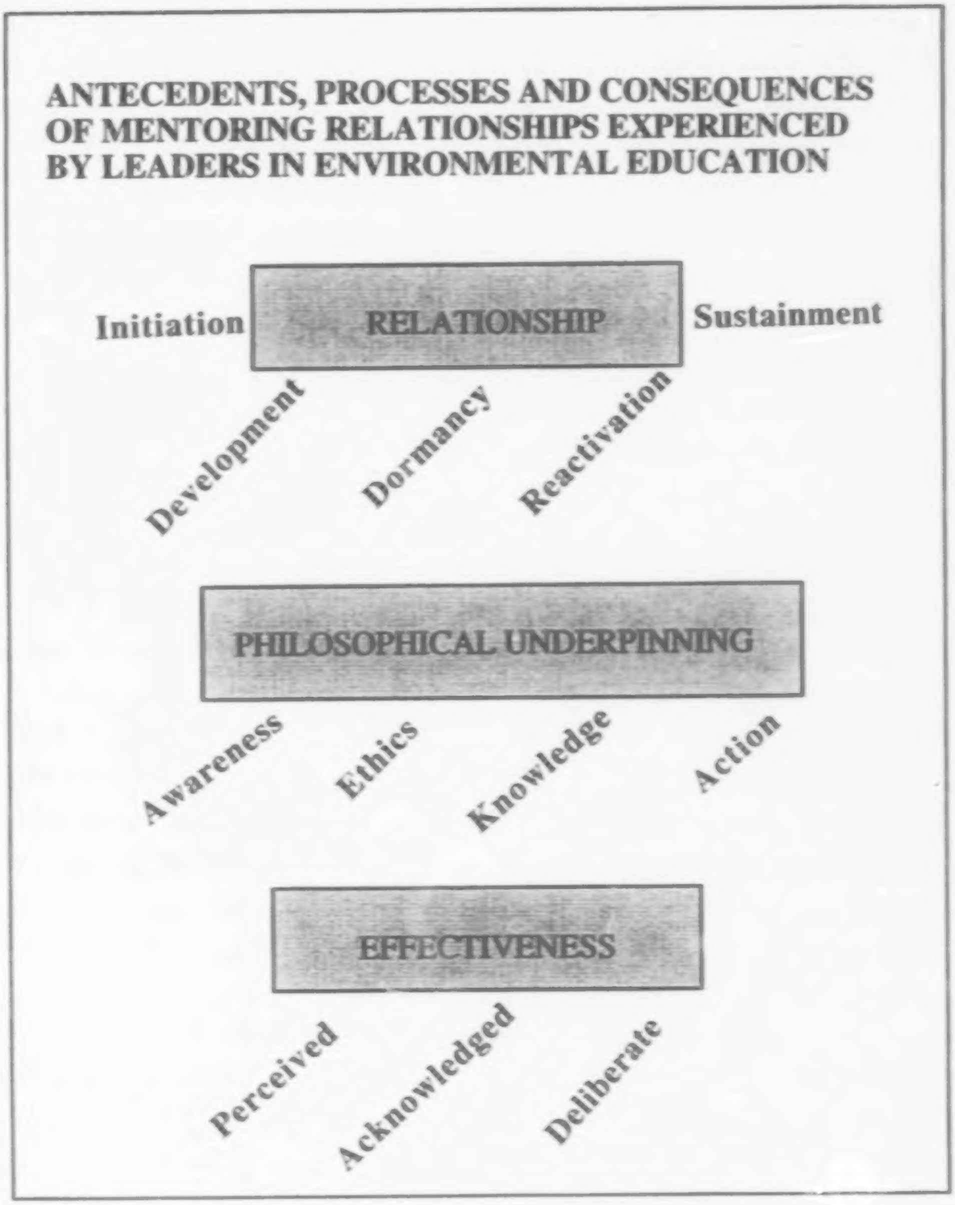
ANTECEDENTS, PROCESSES AND CONSEQUENCES OF MENTORING RELATIONSHIPS EXPERIENCED BY LEADERS IN ENVIRONMENTAL EDUCATION
Initiation
RELATIONSHIP
Sustainment
Development
Dormancy
Reactivation
PHILOSOPHICAL UNDERPINNING
Awareness
Ethics
Knowledge
Action
EFFECTIVENESS
Perceived
Acknowledged
Deliberate

Figure 6.2 The antecedents, processes and consequences of effective mentoring relationships.

for a mentoring relationship involve two people who sense an initial spark of interest which can be followed through by either party. They have usually been exposed to and develop an initial interest in environmental education independent of one another. This interest has been developed in a variety of ways. A sense of environmental ethics

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has often already been established and this is seen as a beginning link between the pair. Usually their meeting is serendipitous and informal, although it may happen in a professional setting.

The mentoring process evolves as the relationship develops and is dependent on the mentors' availability, encouragement, support and the mentorees' receptiveness. This can happen at any age or at any stage of career development. It is important that the mentoring pair communicates to each other their ethical positions and strategies for taking action on environmental education issues. As the relationship continues, even through periods of dormancy, the mentoree may often become more skilled as a leader. This is often the result of increased opportunities afforded by the mentor. As a consequence of the encouragement and professional alliance with the mentor, the mentoree may begin to increase his/her leadership actions *for* environmental education.

The consequences of this mentoring scenario are important for the future professional development of potential leaders in environmental education. If the relationship is only perceived to exist by either the mentor or the mentoree, it still can be effective. If however, the relationship becomes acknowledged and the effectiveness of both the personal and professional benefits is disclosed between the pair, then the chances of mentoring being extended to others increase.

Mentoring was seen as important in formulating career choices in this wide and varied field, which has been described as multi-disciplinary and holistic. The mentor was seen as having a responsibility to the future of the world, to provide reasons for how and why the environment should be managed and conserved, to critique the values of environmental education, and to practice what is preached. Most encouraging was the realisation that mentors can help the cause of environmental education and that mentoring is a way to 'pass on the torch' thereby empowering mentorees to become leaders and to take committed action toward environmental education. The challenge for those who do decide to become mentors is to establish relationships that are intentional, that is, to seek out new potential leaders for the field and to develop bonds which become long-lasting professional and personal friendships. As one mentor summarised, "I was very humbled by the accounts. I believe they represent a fair interpretation".

6.4 The Core Concept - 'The Cascade of Influence'

The fourth research question asked if there was any 'cascade' or continuation of the mentoring process. This involved clarifying whether the experience of being mentored encouraged one to become a mentor thereby enhancing the professional development of future leaders in environmental education. The answer was a qualified 'yes' for many of the subjects. Given the responsibilities, time commitments, the possible challenges to their beliefs and also the influence that they can wield as mentors, not everyone was ready to take up a mentoring role. However, those who were willing to become mentors understood the benefits for themselves, their contribution to environmental education and how this experience might benefit a mentoree. A shared commitment to environmental ethics and action underpinned the long-term, sustained mentoring relationships of leaders and led to a deliberate 'cascade of mentoring' for other environmental educators.

To arrive at a core category within a grounded theory construct, Strauss and Corbin (1990: 121) suggested that after telling the story, one must move on to tell the 'storyline' analytically and to find the central phenomenon which is "abstract enough to encompass all that has been described in the story". They recommended the following:

> Sometimes two phenomena in the data strike the investigator as being equally important or of interest. It is essential, however to make a choice between them in order to achieve the tight integration and the dense development of categories required of a grounded theory.

In this study two ideas kept overlapping as the data was checked and discrepancies were identified leading finally to the core category.

6.4.1 The beginning theory

The survey pointed out that not all of the mentoring relationships had been acknowledged either to the mentor or by the mentor. This was an idea that needed to be pursued in the interviews. The participants had been organised according to the researcher's construct of terms - alpha mentoree, prime or pivotal mentor, supra mentor, hyper mentor and new beta-mentorees. It became evident that many of them were: 1) telling of themselves as a mentoree, 2) speaking as a mentor, 3) commenting on his/her mentoree, or 4) being referred to as a mentor. Using the NUD.IST software, the participants' comments were indexed according to these discrete nodes.

The first theory that the researcher began to test utilised the researcher's construct of terms which is shown in the schematic diagram in *Figure 6.3.* It seemed that the further back in the chain one went, the more likely was the mentoring to be subconscious and unacknowledged and the further down the chain to the new mentorees, the more acknowledged and deliberate the mentoring became. Therefore, positioning in the mentoring chain was linked to the acknowledgment of the mentoring relationship. For example, Carol was a prime mentor who deliberately mentored Pattyanne, an alpha mentoree; Mary, Brad and Sue were all alpha mentorees who had deliberately set out to mentor new beta mentorees.

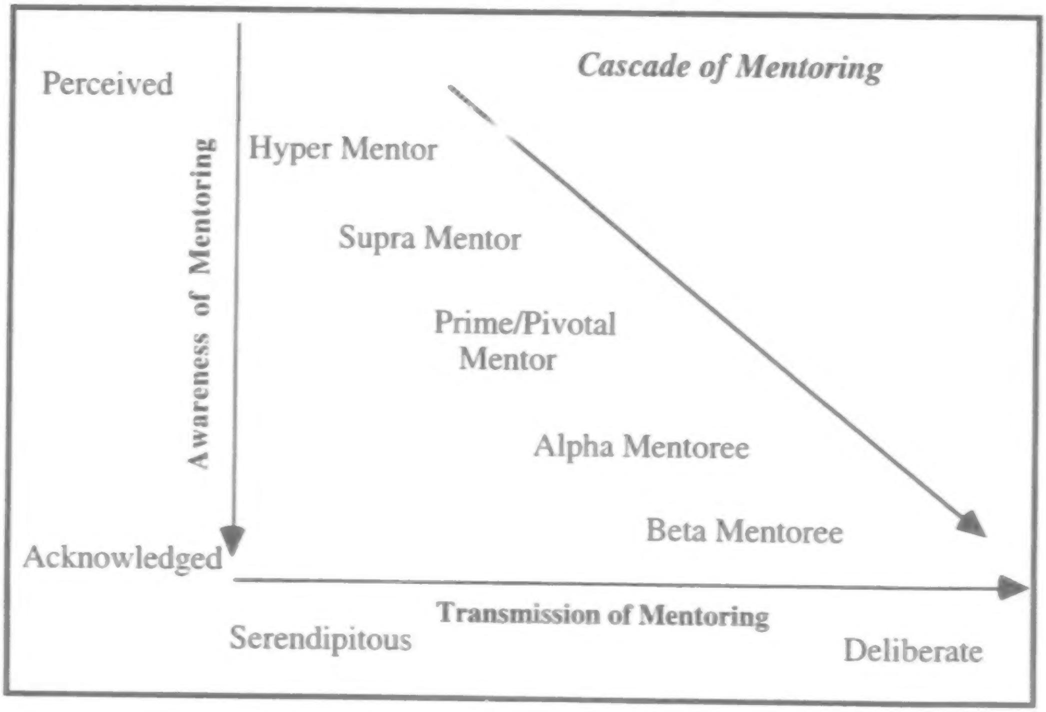
Perceived
Cascade of Mentoring
Hyper Mentor
Awareness of Mentoring
Supra Mentor
Prime/Pivotal Mentor
Alpha Mentoree
Beta Mentoree
Acknowledged
Transmission of Mentoring
Serendipitous
Deliberate

Figure 6.3 The cascade of mentoring from the hyper mentor to the beta mentoree.

The term 'unacknowledged' mentoring was incorporated under the idea of 'perceived' mentoring because confirmation of that status depended on contacting the mentor further back in the line and that was not always possible due to death, retirement or logistical circumstances. Therefore, it could not be confirmed whether the mentors would have said either a) that they deliberately mentored this person or b) that they had been aware that they were thought of as mentors.

6.4.2 The evolving theory

In using a grounded theory approach, one begins to analyse the data early on, but continually re-analyses the accumulating data. Because the interviews took place at different times over three years, certain discrepancies came to light in the later phase of data collecting while trying to verify that mentoring became more acknowledged and deliberate as one went down through the mentoring construct. Again, NUD.IST was useful as it allowed the researcher to run a text search across the interview data to verify individual words which the participants may have used, such as deliberate and conscious, cascading, clans, cloning, and mentorees. It also allowed ideas to be grouped under new node titles such as: integrity, deliberate and conscious, personal values, generativity, clans, discrepancies and controversies.

During the second tier analysis, it became apparent that deliberate mentoring did not happen in the neat pattern expected initially by the researcher. In Case 4, John reported that Isaac, the supra mentor, had deliberately set out to mentor him, yet John, who was seen as a pivotal mentor, reported that his mentoring of three alpha mentorees was not deliberate. In Case 3, Cem reported that he deliberately set out to help Ann, the alpha mentoree, but Cem's own relationship with Paul, the supra mentor, seemed only to be perceived. It was not until two years later, when Paul was finally able to be contacted, that the researcher discovered that he, too, had been deliberate in his mentoring of Cem. It became apparent that deliberate mentoring could happen anywhere within the mentoring schemata - pairs, triads, chains or webs.

6.4.3 The final grounded theory

In order to reconcile these two ideas, the original schematic diagram was changed to the final theoretical diagram in *Figure 6.4*. It was found that

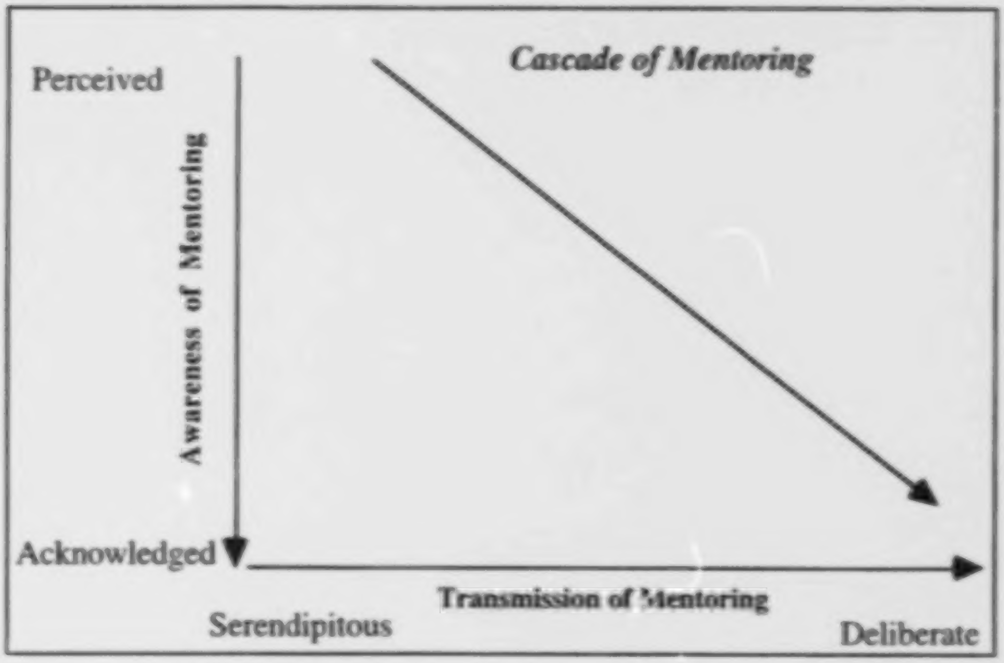
Cascade of Mentoring
Perceived
Awareness of Mentoring
Acknowledged
Transmission of Mentoring
Serendipitous
Deliberate

Figure 6.4 The core concept: the cascade of mentoring among leaders in environmental education.

both mentors and mentorees can be aware of perceived and acknowledged mentoring. As well, they can experience serendipitous or deliberate transmission of mentoring. However, this final cascade diagram postulates that the greater the acknowledgment of a mentoring relationship, the more deliberate the choice of becoming a mentor. Therefore, a greater chance exists for replicating the mentoring process with a prospective mentoree.

The findings of this study confirm essential ideas from the mentoring literature. Firstly, as leaders who have been mentored become more assured in their personal and professional lives, they understand the value of a mentoring relationship and are willing to extend this to others in a 'ripple effect' (Roche, 1970; Vance, 1982). This study agrees with Hunt and Michael (1983) that professionals who are mentored are likely to become mentors of succeeding generations of professionals, but contrasts with their opinion that 'former protégés' are less mobile and more satisfied with their work. As this group of leaders became more advanced professionally (see *Figure 5.13*, page 501), they were often willing to take risks and venture into new areas of environmental education.

This study found that mentoring was a way of clarifying personal beliefs and attitudes and identifying one's personal practices and knowledge base in order to transmit ideas about environmental education to others. Importantly, the findings also highlight specific characteristics of mentors for environmental education. Although this study primarily involved mentoring situations which began informally, mentoring of others in a more formal setting was seen as a possibility. Most of the mentoring reported was not deliberate, however, the subjects stated that making mentoring more deliberate in the future is an important goal. They emphasised a sense of 'passing the torch' or 'spreading the message' and that mentoring is 'cyclic' or a 'chain'.

Based on the criterion for judging a grounded theory (Strauss and Corbin, 1990: 254-257), concepts have been generated from the data supplied in the survey and interviews. They have been related systematically with the linkages which explain the conditions, context, actions and consequences of the mentoring relationships. Variation in the theory has been based on gender, countries, age, career stages and the perspectives of science and geography educators working in many areas of environmental education. The findings can be tied back to the literature, but can also extend it. In summary, the study has been able to go beyond mere description of the mentoring phenomenon to derive the theory of the 'cascade of influence'.

6.5 Implications for Professional Development of Future Leaders

Among other advantages, mentoring can be a career training and development tool for the professional progression for both men and women. However, a research perspective has been needed in environmental education in respect to the role of professional development (Cantrell, 1990; Hart, 1990; Robottom, 1992). The results of this study relate to practitioners themselves in a range of educational settings whether they be classrooms, community services or government departments. As such, the impact of such research should be judged by the insights it provides for the environmental educator in understanding the advantages of a mentoring relationship.

Professional development was discussed in terms of personal reflection which is directed toward a better understanding of the knowledge, values and practices of one's chosen field of work and continued training in leadership skills. Only one leader in this study mentioned meeting his environmental education mentor through continued professional development which he described as, "an intensive formalisation of environmental education as part of my job". This is not surprising given the findings on professional development of environmental educators as described in the literature review. Past training has been object and fact oriented with little training in how to deal with the public concerning complex ethical and social issues (Davies, 1984; Teschner and Wolter, 1984; Sakofs, 1987; Burack, 1988; Magill, 1992). It highlights the need for this research regarding mentoring and professional development of environmental education leaders.

6.5.1 Willingness to Become a Mentor

The subjects in this study have discussed their willingness to become mentors citing benefits for both the mentors and the mentorees. They expressed the desire to work towards the achievement of the goals of environmental education by assisting in the professional development of other educators. They also discussed how they would envision the formation of new relationships by debating the pros and cons of formal and informal mentoring.

6.5.1.1 Benefits for the mentor

The leaders felt that mentoring would benefit themselves in many ways specifically by helping them to clarify their own beliefs and attitudes while furthering the goals of environmental education. Both survey data and interview data provided evidence of this.

Certain intrinsic rewards were noted such as those contributing to the feeling of self-worth, reducing loneliness, renewal of goals and personal enjoyment. Subjects suggested that the mentor could accrue a sense of worthiness because beliefs would be challenged, ideals expanded through feedback, and reflection would lead to a clarification of values. Other remarks implied that becoming a mentor would provide extrinsic rewards such as opportunities to learn new information, revising knowledge, testing ideas, honing skills, gaining insights into new approaches, allowing for a chance to share, discuss, debate, improving communication skills and practicing leadership styles. Mentors felt that they would not only experience a sense of satisfaction, rejuvenation, worthiness, an 'inner glow' and personal joy, but that these emotional ties would extend to mentorees as well. A mentoring relationship would involve a certain level of socialisation and a feeling of kinship might be attained especially with a mentoree who would be satisfied with intrinsic rather than extrinsic rewards.

6.5.1.2 Benefits for the mentoree

In considering mentoring, professional development and leadership, the subjects explained the benefits for a potential mentoree citing personal and professional advantages. The personal stimulation of working with a mentor can present challenges to the mentoree which can cause alteration in attitudes, beliefs and values. The relationship might widen their vision and cause a sense of social awakening.

The mentorees could receive personalised help which increases their self-esteem and sense of control over their own life. In a supportive and non-authoritarian situation, they could learn from their mentors' mistakes and successes. The mentoree would be given opportunities to succeed or fail and through that process learn about themselves and gain confidence. Strong friendships might evolve resulting in a mutual feeling of kinship.

On a professional level, mentorees could improve their skills by having a general model to follow which outlines ways of operating in the field of environmental education. They could also gain other professional benefits such as increased networking, accessing experience and sharing resources.

Several respondents, including Liz, Cem, Gary, Mary and Brad, suggested that along with increased 'political nous', the mentoree could gain the opportunity to become a systems thinker and acquire divergent thinking and problem solving skills. They could develop more responsible decision making skills by examining how the mentors managed successful programs. They could develop partnerships with the mentor to explore new ideas and processes, and ultimately to receive the encouragement to explore a variety of career opportunities.

6.5.2 Types of Mentoring

The subjects of this study reported that mentoring is one of the most effective and efficient methods for developing quality environmental educators who might become leaders. They recognised it is as a process having benefits for both the mentor and the mentoree and gave their views on how mentoring could be envisioned for the future.

Sixty percent of the subjects felt that leadership in environmental education was not hierarchical. Yet, without an organisational structure there were identified constraints to professional development such as the lack of opportunity and funding support to attend environmental education seminars and professional meetings. The scarcity of leadership training implied that there were fewer opportunities to meet a potential mentor in either a formal or informal setting. It was reported that professional development was seen to rely heavily on the capacity of the facilitator and participant-centred sessions where professionals could have a chance to be reflective. According to the leaders, professional development was highly valued as a means of strengthening the leader's personal philosophical base. They felt this was necessary to deal with the constant change and controversy about environmental issues. It was within this kind of setting that one might recruit and train future environmental conservation educators and where mentoring relationships might be established.

6.5.2.1 Informal mentoring - an invitation to join the clan

Many of the subjects in this study had benefited from informal mentoring in a field they regarded as non-hierarchical. In order to be successful, the relationship had to be seen as helpful, worthwhile and comfortable. The mentor was seen to be one who could help the mentoree develop an environmental conscience through a better understanding of delicate ecological balances. They needed to share a gamut of ideas ranging from factual information about specific projects to aesthetic appreciation and have a spiritual connection with environmental education. Commitment was viewed as something essential in this field and it could best be learned from mentors who demonstrated this characteristic in their own lifestyles and work.

Mentoring was not seen as something which could be forced, but if the mentor led by example then the mentoree was attracted to establish a relationship. Recommendations for informal mentoring included having more social contact on a non-professional basis, especially during field experiences.

One paradox emerged from the opinions of the subjects. On the one hand, they felt that successful mentoring needs to be intentional when the mentor and mentoree meet, yet this was not generally the case in this research. On the other hand, they agreed that one cannot set it up in advance because personality differences may be overwhelming and there has to be a 'click' or 'spark' or 'fire'. To overcome this paradox, one mentor and his mentoree spoke of the idea of 'clanning', that is creating a sphere of influence through mentoring, where the mentoree becomes autonomous in his/her own growth. It is based on a realisation that there is an historical connection with other environmental educators and that the new mentoree could become part of that lineage. It was felt that this sense of 'clanning', as opposed to 'cloning', was a dimension of the relationship that one can't guarantee through a formalised mentoring program. One could, however, 'extend an invitation to join the clan'.

6.5.2.2 Formal mentoring - fostering autonomous mentorees

The few subjects in this study who were involved in mandatory mentoring programs in a business or education setting reported negative outcomes due to the involuntary nature of the mentoring. And yet, because informal mentoring has so many serendipitous factors and one cannot predict when or how a mentoring pair might meet, the majority of leaders suggested that environmental educators need to optimise a diversity of opportunities for mentoring to happen on a more formal level. One subject felt that a formal mentor program "is still an artificial construct, but magic things can happen in it". Others pointed out the time commitment needed and that a mentoring relationship cannot happen 'between eight and five or that forty hour work week." Formal mentoring was seen as leading to a long-term relationship where the mentoree was going to be "entwined in the life of the mentor for a long time".

Several specific formal ideas were suggested, but with this *caveat*: "You can set the situation up but if the fireworks aren't there or the communication or the personalities, it may only succeed marginally, but every now and then it might hit it off to a great end".

Training workshops

Several people spoke of formal training sessions such as *Riverwatch* in the USA or *Landcare* in Australia as being places where mentors could meet. These environmental projects were recognised as opportunities for cross-fertilisation. The reasons for possible success included the combination of being informal in its delivery where more experienced environmental educators who may wish to become mentors have a chance to meet new people, and yet, formal in that new information would be advanced. It was vital to have a social aspect from which a personal affinity might spark. From there, the relationship could grow more deeply.

Support Network

Several people suggested generating a voluntary list of possible mentors whose names and area of expertise might be put out as a booklet or in the newsletter through an environmental education network. Or, in today's cyberspace workplace, computer link-ups were mentioned. As one participant stated, "We're talking about a new EPA Grant, the First Environmental Education Mentor Program. I'm serious, it could work".

Cluster Base

One person mentioned the idea of a cluster base which would particularly fit an educational setting. Because of the decentralisation of state education departments, environmental education centres have been cultivating a cluster or group of schools to assist them with environmental education programs. They would be looking for teachers who are receptive to environmental education and mentoring relationships could blossom within that more formal arrangement.

University Programs

One person recommended a model of a successful program for future environmental educators. At the University of Hawaii a professor set up MOP - the Marine Options Program where he interviewed students about their aspirations. During their semester, he set up a non-waged working situation for them with matching professionals in the field. The reports were so successful that the university eventually recognised the value of that program.

One professor spoke of bringing his class of twenty-five students to a conference in which they saw professionals in the field and they also saw him interacting with his colleagues. Those students subsequently held a reunion and "there have been life-long friendships that have evolved and many of those students are the ones that I am mentoring now".

The offshoot of that successful endeavour became more formalised the following semester. Through the creation of an unofficial club, the mentoring process takes place among undergraduates and volunteer faculty members. This is especially helpful to young freshmen and sophomores who are looking for a group with which to identify. By creating an environmental group, one could recruit people into this field and help them find mentors.

The professor said he would "be doing my best to focus the group ... on environmental issues and dealing with those". He felt it would need to be a 'disclosive' atmosphere where the possible mentors would explain their world views towards environmental education. He had hopes that other faculty would see the value of the program and the relationships that evolved. He hoped the students would find benefit by having their ideas become more crystallised and their productivity increased. He was yet unclear about giving the potential mentors any sort of training, but wanted to make sure it would become 'a user friendly environment'.

Post-note to the research

Carol, the prime mentor in Record 3C, e-mailed a post-note to this study which she entitled 'Mentors and Circles'. It summarises the possibilities of formal mentoring and demonstrates the 'cascade of influence' between her new mentoree and her supra mentor, Robert.

Date: Wed, 14 Feb 1996

> *The other day, I began working with a Prescott College student in their formal mentoring program. I am this student's mentor for an independent study we are designing together in Environmental Ethics. After our first meeting he went to purchase the texts: 'Ecology of Commerce', 'Deep Ecology' and 'Words for the Land' which is an anthology of writers. At the next meeting we talked and he told me about his texts and his luck at finding them.*
>
> *I asked what he had read so far. His reply: 'a guy named Robert Pyle (he's in the anthology) is what I was drawn to read first'. 'Why', I asked. He replied, 'I think it was that our experiences and the places I have lived - Denver and Washington state - were familiar and so I felt close to this writer.*
>
> *I did tell my student that I know Robert and we are close friends. How's that for circles of mentors. So fun! I sent Robert a note about it too.*

Summary of the findings

In summary, nine findings from this research are important if mentoring is to be embedded in a professional development plan for future environmental education leaders.

1. Mentoring in the past has usually been informal. However, the potential for more formal programs should be explored.
2. Mentoring relationships develop even after environmental educators are established in the field.
3. Mentoring is long term, although not constant.
4. Mentoring is reported to ground or transform the personal philosophy of the mentoree regarding environmental education.

5. The benefits of a mentoring experience are key for many of the mentorees who assume leadership roles.
6. The mentor is usually consulted when the mentoree makes a career transition to another area of environmental education.
7. Mentoring does not necessarily lead to job promotion or more remuneration.
8. Long-term mentoring defers burnout in a field of jostling politics and controversial topics.
9. Those who have acknowledged the experience of mentoring are more likely to mentor others.

These findings substantiate the core concept of this study, 'the cascade of influence', and they lead to ideas for further research.

6.6 Springboards to Further Research

It was not within the scope of this research to learn about all of the mentors that leaders may have had during their careers. Having to limit their responses to only one major mentor for environmental education posed a problem for some. The subjects themselves posed a number of pertinent questions for further research on this topic, asking how many mentors might one have in a career and in what 'arena' are most mentors - teaching, academia, field-experience, internships, or residential experiences.

Among other recommendations for future research, Gina (Record 4A3) suggested investigating whether short-term, formal environmental education mentoring programs lead to long-term relationships. Heather (Record 4A2) was interested in setting up and deconstructing a formal mentoring program as suggested by this study in order to evaluate its effectiveness.

Three ideas for further research were postulated by the participants in Record 3A. Paul proposed initiating a reunion of the mentorees of one particular mentor. This idea could be implemented by building on the model of 'linked interviews' from this study or using the technique of a focus group interview to find out commonalties and differences in those mentoring experiences. Ann, described the experience of having a mentor from a Turkish background and this planted the idea of investigating the differences in mentoring as understood by western and eastern cultures. Cem suggested exploring further the idea of mentor 'clanning' versus 'cloning'. Cloning can sometimes occurs in areas where the transmission of skills is needed such as for PhD research students in science, nurses and beginning teachers who are moving from novice to expert status. Cem felt that such a question would contrast with the idea of clanning in areas such as art and writing which can, like environmental education, rely on philosophical congruence with the mentor.

Wendy (Record 1B), Ed (Record 1C) and Pattyanne (Record 3C) proposed that one concentrate on mentoring in one area of environmental education reported in this study such as teachers in primary schools, secondary science or geography teachers. This would also be appropriate for workers in natural resources agencies, environmental education consultants or academics. Jack (Record 4B1) had to decide between a well-known environmental activist whom he knew personally and the mentor he finally chose for this study. This invokes the question of whether activists need or have different experiences of mentoring.

These springboard ideas, like the 'doorknob remarks' from the survey, are but a few of the possibilities for future study identified by the subjects and the researcher from this study.

6.7 Summary of the Study

By investigating the autobiographical details of the personal lives, the professional development and the mentoring relationships of selected leaders in the field of environmental education, a cascade of influence has been identified. When the mentoring process becomes conscious and deliberate by the mentor to the mentoree, or the mentoree has perceived a mentoring effect from the mentor, and this effect is coupled with a strong philosophical grounding regarding environmental education which is shared, encouraged and enhanced by the mentor, then potential leaders tend to gain self-confidence and to move laterally across a broad range of jobs giving them a wider sphere of personal influence in environmental education. The analysed data from this sample of leaders enlarges the current picture of mentoring with examples that cross barriers of age, gender and common career patterns. The study illustrates the need for increased opportunities for mentoring experiences which enhance the professional development of potential leaders in environmental education.

In examining the mentoring experiences of leaders in environmental education, this study has contributed to the research literature in nine significant ways.

1. By collecting and analysing qualitative data, the study moved away from the positivistic, quantitative research paradigm of environmental education which has been recently criticised (Cantrell, 1990; Corcoran, 1992; Robottom and Hart, 1993; Hillcoat *et al.*, 1995).

2. Building on existing conceptions of mentoring as a way to encourage leadership (Langton, 1984; Udall, 1986; Beeler, 1988; Snow, 1992a, b; Palmer, 1993; Berry and Gordon, 1993), this study has established a research base regarding the mentoring of environmental education leaders and by triangulating the mentoring stories has verified that there have been changes in leadership positions after the intervention of mentoring.

3. Insights regarding the personal and professional influence of mentors have been gained by examining the idea of mentoring through autobiographical stories of leaders, mentors and new mentorees (Butt, 1993; Seidman, 1991). The study has provided a fuller dimension to the understanding of why leaders become aware of and choose to remain professionals in the field of environmental education (Tanner, 1980; Peterson and Hungerford, 1981; Newhouse, 1990; Palmer, 1993). Also, by looking at the five stages of integrated flow for an 'ecological autobiography' (Paschal, 1960; Krall, 1988; Wilson, 1995), those being, venturing, remembering, comprehending, embodying and restoring, a sixth developmental step is proposed, that of 'cascading' one's ideas about the environment through the process of mentoring.

4. The study has delineated more specifically the characteristics of mentors and mentorees (Segerman-Peck, 1991; Limerick, *et al.*, 1994) within the field of environmental education (Udall, 1986; Beeler, 1988, Gumaer-Ranney, 1993)

5. The study extended the theory of the phases of mentoring relationships (Levinson *et al.*, 1978; Kram, 1983; Caldwell and Carter, 1993) by utilising the concept of 'sustained' relationships which survive periods of dormancy and reactivation or times of rupture and repair.

6. This research has expanded the grounded theory studies (Strauss and Corbin, 1994) on mentoring by looking not only at the personal and professional growth of mentoring pairs (Schmoll, 1982) and the commonality of philosophical interests (Dougan, 1986), but also by interrelating the development of the mentoring relationship with the career progress for this sample of leaders. It has also added to research which employs the computer program NUD.IST as an aid to analysis (Burroughs-Lange, 1994; Richards and Richards, 1994) and, thereby, builds a grounded theory about mentoring that is embedded within and across the data (Mellor, 1995).

7. This research has gone beyond paired interviews such as those conducted by Kram (1993) and others by employing the technique called 'linked interviewing' which allowed the research to be flexible enough to follow promising leads. Importantly, it has revealed the mentoring stories through triads, chains and webs.

8. This study has extended the ideas of a 'ripple effect' from business mentoring (Roche, 1979); has shown that former protégés become mentors of succeeding generations of professionals (Hunt and Michael, 1983), and has given examples of how 'leaders breed other leaders' as in the mentoring studies from nursing (Vance, 1982). The theory of the 'cascade of influence' is substantiated through narrative stories of deliberate relationships among mentors and mentorees.

9. The narrative accounts demonstrate the broadening of mentoring opportunities for women in general (Clawson and

Kram, 1984; Noe, 1988, Byrne, 1989; Arnold and Davidson, 1990; Burke and Mckeen, 1990; Paludi *et al.*, 1990; Segerman-Peck, 1991; Limerick *et al.*, 1994) and, in particular, for women environmental educators (Gumaer-Ranney, 1993).

Critical Reflection

By examining the data grounded in the survey responses and the autobiographical stories from the linked interviews between and within pairs, triads, chains and webs of mentors and mentorees in environmental education, the study has established a cascade of sustained mentoring relationships which affected career progress, personal relationships, professional alliances and philosophical development. These mentoring relationships have moved from being perceived then acknowledged to becoming deliberate and involved the transmission of ideas regarding awareness, ethics and action for environmental education. The implication for professional development is that deliberate mentoring in either informal or formal settings is an appropriate avenue to develop future leaders in environmental education.

As the researcher of this study, I have been in a position to reflect critically upon my own mentoring experience. Through introspection, I was personally able to confirm the field research data that has been presented and discussed. I have come to understand that, like the quiet momentum that drives a single droplet of water over the top of a falls to join a cascade below, the mentor may influence an individual toward ever-broadening affective and cognitive development which can transform his or her leadership actions. My hope for environmental education is that, through mentoring, the pool of leaders may be expanded and refreshed.

Appendix A

Pilot Survey Report

EFFECTIVE MENTORING OF LEADERS IN ENVIRONMENTAL EDUCATION: THE CASCADE OF INFLUENCE AND THE IMPLICATIONS FOR PROFESSIONAL DEVELOPMENT.

Carol Fortino

Department of Social, Business and Environmental Education

April 28, 1993

ANALYSIS OF THE PILOT SURVEY

After a review of the literature on environmental education, mentoring, and surveying techniques, a survey was designed for piloting in Queensland, Australia and Colorado, USA. Part I sought information about the respondents' background, educational influences toward environmental education, ideas about leadership, mentoring, and professional development. Part II asked questions about a specific mentor and the mentoring relationship. The aim of this pilot survey was not to produce findings, but rather to see if the questions posed revealed information consistent with the stated aims, namely:

1. find out if leaders have been mentored sometime during their involvement with environmental education
2. explore the timing and duration of the mentoring process
3. understand how the mentoring relationship has been effective
4. clarify the issues by which mentoring might enhance professional development in environmental education.

Pilot Sample

One survey was mailed with a paid-postage return envelope to six persons in each country who were identified as leaders through their known work and interest in environmental education. The persons were paired for similar interests in each country: teachers who involved students in environmental education projects; natural resources personnel committed to environmental education beyond the scope of their job; community activists known for their stance on environmental issues; university lecturers involved in environmental education pursuits, personally and professionally; directors of environmental education centres who influence both children and adults; and instructors of outdoor education centres with a strong interest in education for the environment. Although the participants' knowledge and commitment to environmental issues was known, their knowledge and experience of mentoring was unknown.

Phone calls were made to the Australian contingent and personal notes sent to the American participants. Of the twelve surveys sent, Australia had a 100% return rate and the USA 83%.

Analysis

The analysis began with tabulating the responses of the eleven respondents from the ticked answers and written text. The responses were analysed to see if the question was understood and the range of answers were similar. This small number allowed only for report of the responses and not for generalisations and inferences to be made from the interpretation of data.

The time to fill out the survey ranged from 25 minutes to 3 hours with 1 1/2 hours as the average. Comments about the overall quality of the survey included: needed in-depth thinking and reflection, well constructed, lets talk about it, rather long, space given adequate, shorten, less narrative, there is very little mentoring for community volunteers, felt insecure in "definitions", thinking from an outdoor ed perspective, great questions."

General Letter of Introduction

Critiques of this section included broadening the phrase "the mentor experiences" to include the possibility of more than one major mentor. It was altered to read "any mentoring experiences" The inclusion of the definition of "a mentor" may have influenced the comment about having a mentor, "I don't think I can identify a specific mentor, many people would be influential, but what if you have more than one mentor?" Another reviewer of the survey suggested that one should definitely refrain from defining mentor as this "naturally has significant implications for the meaning which may be ascribed to mentoring." She asks if the phenomenon "mentoring" or "being mentored" is being probed. The purposes of this survey was to categorise the similarities and then delineate the distinctions of both the definition and the experience of mentoring as they might apply to the field of environmental education.

1. Background Information

Respondents to the pilot survey ranged in age from 26 to 55+. Seven out of eleven were female. Had all persons responded, the gender balance would have been 8 female and 4 male. There was no particular reason for this choice, other than those were contacts known to the researcher at this time as active environmental education leaders who fit the criteria for paired respondents from each country.

2. Educational Influences

This question was somewhat confusing and two respondents suggested the question be split into initiators and developers or training and personal experiences. Another wondered if there was a "need to know about the academic or the experience based backgrounds". The answers explaining major influences for involvement with environmental education included personal interest in natural science often stemming from childhood experiences. Two mentioned high school biology as an initiator of interest, while seven out of nine indicated coursework at tertiary level. As adults, employment and environmental seminar experience were cited including one by Steve Van Matre. Teachers continued their involvement by holding extra activities for students such as environmental education clubs and field trips. This was echoed by outdoor educators.

Since the emphasis of the question is what led these leaders to environmental education, the heading will be retitled INFLUENCES TOWARD ENVIRONMENTAL EDUCATION and the question rephrased to read:

> Please list aspects of your personal experience or educational background, that
>
> initiated and developed your involvement with environmental education.

3. LEADERSHIP IN THE FIELD OF ENVIRONMENTAL EDUCATION

Leadership Qualities

Firstly, there was a comment regarding "short phrases", saying that the criteria of the question may influence the meaning of the responses and that for written response, respondents should be able to choose their own form of expression. However, looking at the responses given, they were within the parameters of what was expected.

This question was divided into two parts- 3.1 the concept of leadership and 3.2 distinguishing leadership in environmental education. The respondents gave attributes of general leadership such as strong commitment to ideas, ability to empower others, give others a chance for their ideas, self- motivated, effective communicators, good listeners, knowledgeable, innovative, good decision making, and good judgement. Importantly, they were able to distinguish particulars for environmental leaders citing a global approach, commitment to environmental education issues, a broad-base of knowledge, tolerant, not dogmatic, working for societal change, encouraging personal development of attitudes, values and skills, and being practicing models of their environmental ethics. In analysing the differences and the thrust of this research, the revised question will combine 3.1 and 3.2 to simply ask:

> Please list key attributes which you feel are important for leadership in environmental education.

Frequency of Involvement

3.3 This questions asked about frequency of involvement in environmental education from a variety of roles. Most had been involved as a teacher/educator at some point with six out of eight responding *often* to *always*. Most were *occasional* workshop participants and were part of team facilitating *very often* to *occasionally*, four *often* being the key facilitator. Most indicated they were *never* a "community expert". This term was confusing and other suggestions were community activist and representative. The term was broadened to "community representative". Most had *never* been a business contributor, industry spokesperson, resources professional or government representative during their involvement with environmental education, unless it was directly tied to their employment. The purpose of this question - to indicate the scope of professional development roles engaged in by the respondents - was satisfied.

Philosophical Stance

Questions 3.4 and 3.5 were statements which described the philosophy of leadership in environmental education. That leadership in environmental education is not hierarchical was *strongly agreed* to by three, *agreed* to by four, leaving two as *neutral*. That these leaders need strong philosophical beliefs in order to deal with controversial issues inherent in the field, was either *strongly agreed* or *agreed* to by eight out of the nine. A suggestion to leave room for comments under these statements will be included in the revision.

Keeping Current in the Field

3..6 *Very Important* and *Somewhat Important* methods of keeping current in the field of environmental education were indicated for current journal articles, interaction with other environmental professionals, workshops including e.e. material, seminars on socially critical issues, scientific background, attendance at e.e conferences and taking time for personal reflection. New outdoor setting and training on how to lead workshops/seminars had mostly *moderately important* responses.

Active Leadership

3.7 To verify the active leadership of the respondents, it was shown that only two had been *inactive* his year due to illness and further study. Most were *occasionally* or *frequently* involved this year, and *frequently* to *very often* involved in the last five to ten years.

Current leadership undertakings involved teaching from secondary to tertiary level, facilitating student and community groups, participating in government and community policy and politics for environmental issues, further tertiary education, and contributing presentations at professional conferences.

Other Comments About Leadership in Environmental Education

Other comments showed that there were not enough opportunities to keep up with professional development in this field and that there were many constraints. There was a need for better background in economics, technical environmental science and public policy. Environmental Leadership seemed to be a lifestyle choice.

4. Process of mentoring

4.1 The questions asked about the "process" of mentoring. Respondents asked if this the "process of choosing a mentor", ways the mentor works, or type of person?" The range of short phrases indicated that most were describing a characteristics of a mentor rather than a process It was suggested that the question be rephrased "Please explain what you mean by mentoring". The question was changed to read:

> Using *short phrases* , please explain what you mean by **mentoring.**

Following are examples of the written responses describing a mentor, some were frequently repeated:

> broad-based knowledge; educational, skilled
>
> good listener, empathy, genuine interest in others
>
> cooperative, coach, even if not an expert
>
> ability to communicate, discuss, defend and question values

practices their values,

openness, approachability, availability

4.2 This question asked for distinction of mentoring in environmental education. Even though the word mentoring could suggest a process, most again described a mentor. Therefore the question will be rephrased to read:

> Please list key attributes which might *distinguish* a mentor in environmental education from a mentor in other areas.

Repeated attributes distinguishing mentor for environmental educators were:

addresses broad-based issues

compatible with philosophy and values of e.e., dedicated to protection of the environment, devotion to field of e.e. through lifestyle

models his/her practices, ethics and political beliefs

empowering, responsible

democratic, collaborative, trusted

4.3 The question asked respondents to place themselves on a scale between to word pairs. One person thought the range 1-7 was too wide. Another thought the question might read "what do you see as most applicable to the practice of mentoring within the field of environmental education." Other respondents wished to indicate both or all aspects of the range. The range will be shortened and include a section for comments.

The word pairs were thus indicated: accidental/intentional leaned mostly toward intentional; informal/formal at mid-range; useless/useful had a majority at useful; unplanned/planned showed a wide scatter from 4 to 7 ; discouraging/encouraging was definitely toward encouraging, as was long-lasting over short-term and personal over impersonal. Professional/social showed the most confusing results with respondents scattered and adding comments for both and all aspects. The addition of a comment section will allow respondents to clarify their positions.

Characteristics of Mentors

Taking examples from mentoring literature question 4.4 asked for ranking of 1 (highest) to 6 (lowest) on six phrases in three groups. For this pilot no statistical analysis was done on the ranking as will be done for the entire survey. However a pattern emerged from the groupings showing the group concerning personal attributes rated first, the organisational benefits rating second, and the extension of the networking last. The most salient Other Comment states: "This was perhaps the most important in assisting me in formulating my career choices as I learn most effectively and enthusiastically from "the experts" who are willing to share their successes and failures and who can "lead in a democratic way" allowing me to make my choices based on that which I gained from them."

5. Professional Development

Definition

In 5.1 key attributes repeatedly included were: improved knowledge, most recent research finding, opportunity to mix with the same interest group, is praxis based, widens network, involvement in professional organisations by contributing to the field and taking workshops. Question 5.2 asked about distinctions for environmental education. Those given include: presenting information without bias, variety of sources, more interactive, emphasis on ethos, emancipatory and toward change, and being reflective. In comparing the similarities of two responses, only question 5.2 will be included.

Current Status

5.3 These paired words were on a 1-5 scale. There was a scatter among confident to rethinking between 2 and 4. with no one marking 1 confident. Unsure and Sure ranged from 3 to 5 with only one sure (5). All marked either 4 or 5 toward reflective against being content; the majority were mid-point at 3 between satisfied and dissatisfied, but they were definitely 4 on the defined and exploring. Free responses for "Other" included the words: alone, still-evolving, unrecognised, dedicated, still on a learning curve, not-qualified, expanding, new perspective.

Becoming a Mentor

Item 5.4 queried the respondents 'willingness to become a mentor. The majority responded *yes* with reasons given as: enjoyment, mutual appreciation and respect, if requested, am doing it now, probable a younger person. Section 5.5 asked them to envision benefits for themselves. Repeated descriptions include: giving and receiving ideas, putting skills to use, satisfaction, clarification of ideas, beliefs and values, opportunity to communicate my ides and values. This is summed up by one persons saying it would be "a feeling of purpose in my contribution to further advance the need and values for environmental education in business, industry and education." Question 5.6 asked about benefits for the mentoree. Listed were: finding resources, similar interest, stimulating, challenging, personal growth in intellect, emotional and ethical relationships, development of the skill to mentor others, a variety of career opportunities and others.

Other Comments cautioned about being a power influence over a student, that mentors should advocate alternative views, that one-to-one was an advantage. One definite cultural difference that emerged even from this small sample was the fact that in the USA "interns, apprentices and trainees are so underpaid", as opposed to the living wage ethic of Australia.

Mentor

Part I of this section asked for some general background information about having a mentor which was answered through check off and short fill-in answers. Two out of nine answered *no* to having a mentor, while two others answered *no* because they had several mentors and felt the question restricted further response. Five answered *yes* to having had a mentor. The questions will be rephrased to read

> Have you had one or more mentors during your involvement with environmental education?
>
> No _____ (Please go to **7.6**)
>
> Yes _____ one major mentor___ many significant mentors_____

This change encouraged those with multiple mentors to describe the single most influential mentor for the purposes of the survey. The directions for those answering *yes* will read:

> Please describe the mentoring experience of your the single most influential mentor throughout your career in environmental

Background

In 6.1 the gender of the mentors was 4 out of 5 male and comments showed this made little difference stating "people are people; dedicated and major contributors to the field". However, one pointed out that in Queensland, positions of leadership are still held by a male majority.

Item 6.2 concerned how long the mentor was known. This question will be eliminated as it produced results identical with 6.6

The age of the mentor was given in 6.3 and showed only one was *less than five years older,* most being *5 to 10 years older.*

The cultural background in 6.4 was the same in all cases with comments showing this was not important, except to say that similarity of languages and initial development was easier; however one pointed out they simply did not "have much contact with other cultures.

Timing of the Relationship

Question 6.5 found that the mentor was mostly significant during student days and early in their environmental career. Reasons given were: guidance, knowledge and skill, experience, bolstering low confidence, working together, respecting accomplishments and vision.

The length of relationship shown (6.6) spanned 1 to 25 years, each case being unique

During the formative stages 6.7a contact varied, but usually occurred between daily and monthly. Presently, 6.7.b indicates that only one respondent never meets due to the mentor having been a professor of correspondence courses, while the others continue meeting from monthly, twice a year and yearly. Question 6.7c indicated that influence changed due to increased experience and understanding and confidence on the part of the mentored. On person mentioned changes of the point of questioning the mentor's "philosophy and vision"; others become close personal friends.

In trying to answer if the mentor works closely with the mentored, question 6.8 will be clarified to read "Where does this mentor NOW work..." The survey responses showed that although the mentor does not work in the same workplace, they may or may not be in the same organisation. Usually the two are not in the same city, even though they are in the same region, state and country.

Question 6.9 asked about topics discussed with the mentor. Answers covered the range from work and career, personal matters, professional development, environmental and education philosophy and issues to career option.

Influences and changes

Items 6.10 and 6.11 showed that the amount of influence on the mentored personally and for their careers was usually substantial

The endings of the relationship was described in 6.12 as friendly and supportive, but two indicated N/A as it was still on-going.

Part II asks for more detail about the relationship and therefore will be retitled as The Mentoring Relationship

Beginning of Relationship

Answers in 7.1 repeated some information from 6.5. Since the results of this study may have implications for professional development, the words "your professional development " were written in bold-face to elicit some clarification. A few comments indicated wanting a career change into environmental education, others mention wanting a career shift from being a trained naturalist.

Reasons for the development of the relationship were given in 7.2 as: correspondence course of study, new environment at the university, inexperience and lack of knowledge, principles beginning to develop, guidance and advice, assistance in arranging opportunities, similar workplace situation, and modelling of praxis.

Career Influences

Career and leadership choices as explained in 7.3 seemed to be influenced by such factors as : cementing the enjoyment of e.e. career choice, they had a belief in my ability in e.e., showed me my strengths, valued my background in the field, discussed the state of environmental education.

Effectiveness of Mentor

In 7.4 the answers showed congruence with Part 4 in explaining general characteristics of mentors with those found in this particular mentor. The answers echo: mutual respect and friendship, similar interest and enthusiasm, role model. being knowledgeable, having organisational skills, support, and freedom to pursue my own interest.

Importantly, several people gave names of the mentors in 7.5, so that an in-depth interview could be held with them as well as the mentored. This will be key in the final analysis of the thesis research.

Other Comments

Lastly, 7.6 asked for other comments about mentoring in environmental education. An interesting comment was that "teacher are not good mentors as they are too subject-based, tend to take over, organise and teach too much". Interestingly, university lecturers came up repeatedly as being an influence in pursuing environmental education leadership. They were seen as empowering, supportive, and an avenue to transfer personal knowledge. It is summed up by the comment, "a lot more menters are needed."

Conclusion

Analysis of the pilot survey led to questioning of the applicability of some section headings and specific wording of items. The comments sections provided free writing so as not to impose responses offered only in tick boxes and gave an indication of question clarity. The pilot survey, albeit quite small, gave general verification of the literature through the similarity of responses (Moore, 1982 , Segerman-Peck, 1991 , Limerick, 1992 and others) What was crucial to this study was to probe any differences in the mentoring relationship which may be unique for environmental educators. The pilot survey which was been kept deliberately small became most helpful in refining the questionnaire based on responses from the participants and setting the tone for interviews of those having been mentored A paper was prepared only as a preliminary to how the final survey data might be analysed, and was not meant to suggest in-depth insights at that point.

Appendix B

Final Survey Questionnaire

DEPARTMENT OF SOCIAL, BUSINESS AND ENVIRONMENTAL EDUCATION
QUEENSLAND UNIVERSITY OF TECHNOLOGY
BRISBANE, AUSTRALIA MAY, 1993

You have been identified as a leader in environmental education and are invited to take part in a survey involving persons from Colorado, United States, and Queensland, Australia. I am gathering information about the role of mentors and their effects during the careers of leaders in environmental education.

The main focus of my doctoral research is on the mentoring experiences that you may have received during your involvement with environmental education. This might have occured in the field of teaching, community service, government, industry, business or natural resource areas. Mentors have been described as guides in life who provide information, support and feedback on personal and professional levels (Segerman-Peck, 1991). Mentoring practices are well documented in business, nursing, higher education, educational administration, and teacher induction. However, evidence is scant in the field of environmental education. Therefore, the aims of this survey are to:

1. find out if leaders have been mentored at sometime during their involvement with environmental education
2. explore the timing and duration of the mentoring process
3. understand the effectiveness of the mentoring relationship
4. clarify how mentoring might enhance professional development in environmental education.

I hope that you will find the response format easy to complete in no more than an hour. Please return it in the pre-stamped envelope as soon as possible. **All information from this survey will be treated in the strictest confidence and only the researcher will have access to the data. No identifying information will be included in my thesis and only general statistics and a summary form of comments will be compiled, unless permission is given.** If you have no objections, please provide your name as I may wish to contact you to discuss the possibility of an individual interview to further inform some of the research questions. If you would like further information, please write to Queensland University of Technolgy, Locked Bag #2, Red Hill, Qld. 4059, Australia.

Thank you for your time and effort.

Carol Fortino (Bergevin)

ADDRESS Work____ Home____

PHONE:Work____________
Home____________
FAX ____________
e-mail____________
I would be willing to participate in an interview? Yes____ No____

1. BACKGROUND INFORMATION

1.1 Age (please circle)

18-25 26-30 31-35 36-40 41-45 46-50 51-55 55+

1.2 Gender Male____ Female____

2. EDUCATIONAL INFLUENCES

Please list aspects of your personal experience or educational background which initiated and developed your involvement with environmental education.

initiators____________

developers____________

3. LEADERSHIP IN THE FIELD OF ENVIRONMENTAL EDUCATION

3.1 Please list key attributes which you feel are important for leadership in environmental education.

3.2 Leadership positions in many organizations can be described in an hierarchical pattern, but this is not true in environmental education.
How strongly do you agree with the above statement? (Please Circle)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

Comments____________

3.3 Leaders in environmental education need strong philosophical beliefs in order to deal with the controversial issues inherent in this field.
How strongly do you agree with the above statement? (Please Circle)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5

Comments

3.4 The following is a list of ways in which leaders may keep up-to-date with current ideas in the field of environmental education (e.e). In your opinion how important are each of these? VERY IMPORTANT, SOMEWHAT IMPORTANT, NOT APPLICABLE, MODERATELY IMPORTANT, UNIMPORTANT. (Please Circle)

	V IMP.	SOME	N/A	MOD	UNIMP
current journal articles	1	2	3	4	5
interaction with other e.e. professional	1	2	3	4	5
workshops which include e.e. materials	1	2	3	4	5
seminars on socially critical issuses in e.e.	1	2	3	4	5
e.e. scientific background sessions	1	2	3	4	5
attendance at new e.e. outdoor settings	1	2	3	4	5
attendance at conferences on e.e.	1	2	3	4	5
training to lead workshops/seminars	1	2	3	4	5
time for personal reflection about e.e	1	2	3	4	5
mentoring or being mentored	1	2	3	4	5

Others

3.5 How active have you been in leadership roles in environmental education within the following timeframes? (Please Circle)

	this year	last 5 years	last ten years
very little	1	1	1
little	2	2	2
occasionally	3	3	3
frequently	4	4	4
often	5	5	5
very often	6	6	6

3.6 What leadership role are you currently undertaking in the field of environmental education?

Please provide any other comments about **leadership** in enviromental education

4. MENTORING

4.1 Using *in short phrases*, please explain what you mean by **mentoring**

4.2 Please list key attributes which might *distinguish* a **mentor in environmental education** from a mentor in other areas.

4.3 The following adjectives have been used to describe the mentoring process. In your opinion, what do you see as most applicable to **mentoring within the field of environmental education**? (Please circle)

accidental	1	2	3	4	5	6	7	intentional
informal	1	2	3	4	5	6	7	formal
useless	1	2	3	4	5	6	7	useful
unplanned	1	2	3	4	5	6	7	planned
discouraging	1	2	3	4	5	6	7	encouraging
short-term	1	2	3	4	5	6	7	long-lasting
personal	1	2	3	4	5	6	7	impersonal
professional	1	2	3	4	5	6	7	social

Comments

4.4 The following characteristics have been indentified by persons who have been mentored. Considering the field of environmental education, please rate their importance. For each grouping please use 1 as highest importance down to 6 as lowest importance.

4.4 a **Characteristics**

Group 1 List 1 through 6
showed me organizational ropes ____
introduced me to a new network ____
concerned with my career progress ____
increased my power base ____
provided expanded opportunities ____
allowed me leeway to make mistakes ____

Group 2 List 1 through 6
concerned with my personal matters ____
helped formulate my attitudes ____
changed my beliefs ____
improved my self-confidence ____
transformed my view of the world ____
was available for consultation ____

Group 3 List 1 through 6
provided travel opportunity in relationship to career ____
introduced me to a wider network ____
delegated more responsibility to me ____
increased my access to resources ____
opened opportunities for me to work outside of my normal job ____
removed barriers with employers to allow new opportunities ____

4.4 b Please rank the three groupings of characteristics in the order of their importance. Group____ Group____ Group____.

Please provide any other comments about mentoring in environmental education ____________________
____
____
____
____
____
____
____

5. PROFESSIONAL DEVELOPMENT

5.1 Please list key attributes which distinguish professional development in environmental education from professional development in other fields.
____
____
____
____

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5.2 **Using the following pairs of words, where would you consider your professional development in environmental education to be?**

confident	1	2	3	4	5	rethinking
unsure	1	2	3	4	5	sure
content	1	2	3	4	5	reflective
satisfied	1	2	3	4	5	dissatisfied
defined	1	2	3	4	5	exploring

List other words that describe your current status as a professional in e.e.

____

5.3 At this stage of your professional development would consider becoming a mentor for someone in the field of environmental education? Please explain briefly ____

____

____

____

5.4 If you are or were to become a mentor for someone in environmental education, please describe the **benefits** you would envisage **for yourself**.

____

____

____

____

____

____

____

____

5.5 If you are or were to become a mentor for someone in environmental education, please describe the **benefits for the other person**

____

____

____

____

____

____

____

____

Please provide any other comments about **professional development through mentoring for environmental educators.**

____

____

____

____

____

____

____

____

____

____

6. MENTOR -Part I

Have you had one or more mentors during your involvement with environmental education?

No ____ (Please go to 7.6)

Yes ____ One major mentor______ Many significant mentors_____

(Please continue)
The next sections will ask you to consider the single most influential mentor throughout your career in environmental education.

6.1 Gender of the mentor (Please Circle)

Male	1
Female	2

Is this an important consideration for you? Yes___ No___ Please explain.

____

____

____

6.2 Age (Please Circle)

Younger than mine	1
Same as mine	2
Less than 5 years older	3
More than 5 years older	4
More than 10 years older	5

Is this an important consideration for you? Yes___ No___ Please explain.

____

____

____

6.3 Cultural background (Please Circle)

Same as mine	yes	no
Different to mine	yes	no

Is this an important consideration for you or not? Please explain.

____

____

____

6.4 During your involvement with environmental education, when was the most significant time that you have known your mentor? (Please Circle)

pre-student days	1
student days	2
early in envir ed career	3
mid-career in envir ed	4
at career change stage	5
later career in envir ed	6
throughout my career	7

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Briefly, what was the impetus for the development of the mentorship at that stage of your career in environmental education?

6.5 Length of relationship

____(enter years)

6.6 a During the formative stages of the relationship how often did you have contact? (Please Circle)

Daily	1
Weekly	2
Fortnightly	3
Monthly	4
Other	5

Please specify____

6.6 b How often do you meet now?

6.6 c How has the influence of the mentor changed over time?

6.7 Does this mentor now work:(Please Circle)

-in the same workplace	Yes	No
-in the same organization	Yes	No
-in the same city	Yes	No
-in the same region	Yes	No
-in the same state	Yes	No
-in the same country	Yes	No

Other (please specify)____

6.8 When you and your mentor met/meet, what did/do you discuss? **(Please Circle as many as apply)**

Work only	1
Work and career	2
Personal matters	3
Professional development	4
Environmental Philosophy	5
Environmental Issues	6
Personal philosophy	7
Educational Issues	8
Career options	9
Other	10

Please explain____

6.9 **Consider the amount of *influence your mentor had on you personally***
(Please circle)

Extraordinary influence 1
Substantial influence 2
Average influence 3
Little influence 4
No influence 5

Comments____

6.10 Consider the amount of influence your mentor had on your career.
(Please circle)

Extraordinary influence 1
Substantial influence 2
Average influence 3
Little influence 4
No influence 5

Comments____

6.11 If the relationship with your mentor has ended, would you describe the ending as (Please Circle)

very friendly	1
friendly	2
supportive	3
neutral	4
unfriendly	5
hostile	6

Briefly explain why.

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7. MENTORING RELATIONSHIP PART II

7.1 Briefly describe the stage of your professional development in environmental education when the mentoring relationship began.

7.2 Briefly describe what led to the development of the mentoring relationship.

7.3. Please explain how your relationship with your mentor may have influenced any career and leadership choices you have made or are contemplating making in the field of environmental education.

7.4. Please explain why your experience with this person made him/her an effective mentor for you.

7.5 **Would you be willing to give the name, address and phone number of this mentor, so that a follow-up interview can be held using your name.**
If so, please provide the information below:

7.6 Please feel free to write about any other issues that you feel should be included in a study on mentoring in the field of environmental education.

Thank you for your time and effort.

Appendix C

Sample of Survey Data Analysis with Identification Codes

Open Comments Key

Examples: 1-9, 2-33

1 indicates Australia, 9 is the order in which the survey was received

2 indicates USA, 33 is the order in which the survey was received

7.4 why effective mentor

professional in environmental education

2-43 Not only was he caring, but a real professional and in the field of environmental education. I have had other people be supportive of my work,m but they are not a mentor. Also, he was a mentor on both a personal and professional level. I was and continue to be open to his influence."
2-48"Deep sincere human qualities mark C. She knows how to listen, reason carefully, kindly responds, respects everyone and everything, sincerely is humble and loving, polite and humorous, well-balanced in all aspects -professional, personal and social."

change needed

1-9 "The present Natural Science course doe not address issues on e.e. effectively. a very theoretical approach is attempted. After the Uni course I realized a change must be made and I took steps to initiate it"
2-6 "I respected his knowledge and work experience. He passionately believes in what he says. he practices what he preaches-walks his talk. He opened my belief system to a new, exciting world where I could apply the lessons of history to the decisions of the present and future."
2-49"She allowed me to grow in my belief that I have something worth sharing-she is concerned about me as a person and a friend"

characteristics of effective mentor

1-11 "Respect for her knowledge, experience, age, attitudes, abilities, leadership, intelligence, values, capabilities, creativity, organizational skills, confidence, energy talent"
1-12 "This person was very knowledgeable, skilled and experienced. We worked closely in a team situation, mentor often a mode or instructor or adviser. Mentor only available resource person initially. Mentor was flexible, supportive, willing

to model. Was willing to give responsibility and freedom to pursue own projects.

1-55 "Her strength, determination and love of what she did"

2-33 "I admire his experience, expertise, leadership and ability to develop effective systems. he is an excellent manager, willing to take risks, continues to challenge himself personally and professionally. He is highly intelligent, values and respects others' special skills and contributions. He is a role model for the type of leader I strive to be"

2-34 "brother to brother situation with seeing and perceiving modeling"

2-37 "this person had confidence in me and encouraged my explorings and searchings"

2-39 "She has always been helpful, but not stifling. She has always been supportive of me and believed in me. She has always shared and listed to me. We have a mutual respect for each other"

2-44"He helped me have the courage to take risks; he was a good "sounding board"; he was a true friend; he never tried to "impress" me or act over important (he let me see him as a real person); I was comfortable around him and never had to worry about sexual harassment!"

stimulation of ideas

1-3 "Stimulation of ideas and problem solving-leading to establishment of successful clinical practices"

1-15 "I get on with her very well and I admire what she has been able to achieve in her own work. The information and advise is very relevant to me"

1-22 "I was young, keen, interested in learning new thought.. He had open ideas and was a warm person who allowed me to become friends with his family and friends.

1-24" Some common outside interest, his warm and friendly nature. The respect in which he was held by his peers. The respect he showed for my abilities. He set high standards, was highly intelligent and had sound ideas and good forecasting ability-he predicated many advances before their time."

1-27"We respect each others abilities and are open with each other in discussing issues, professional or personal"

1-54 "Great depth of knowledge and experience, very warm and encouraging demeanour, very supportive and non-demanding"

1-55 "His passion for environmental issues and his courage to disagree with big business"

2-8 " he gave me the space to define my own actions and choices while being available for inquiry"

Appendix D

Interview Questions

INTERVIEW QUESTION

QUESTIONS BASED ON
SEIDMAN, I. E. (1991) INTERVIEWING AS QUALITATIVE RESEARCH LONDON, TEACHERS COLLEGE PRESS.

BUTT, R. (1993) USING AUTOBIOGRAPHY IN RESEARCH , UNDERSTANDING AND FACILITATING DEVELOPMENT IN EXPERIEINCED AND NEOPHYTE HELPING PROFESSIONALS" SEMINAR, QUEENSLAND UNIVERSITY OF TECHNOLOGY NOVEMBER 18, 1993, AUSTRALIA

QUESTION 1 LIFE HISTORY-CONTEXTUAL BACKGROUND

1. PLEASE RECONSTRUCT YOUR LIFE STORY AS IT PERTAINS TO ENVIRONMENTAL EDUCATION UP TO AND INCLUDING YOUR PRESENT JOB.
    A. HOW DID YOU COME TO BE A LEADER IN ENVIRONMENTAL EDUCATION?
    B. PLEASE REVIEW YOUR LIFE HISTORY UP TO THIS TIME.
    C FOR CHRONOLOGY-CAN YOU TELL ME AGAIN WHEN THATHAPPENED?
    D. WHAT WAS IT LIKE TO BE IN A LEADERSHIP POSITION IN ENVIRONMENTAL EDUCATION?
    E. CAN YOU GIVE ME MORE CONCRETE DETAILS CONCERNING THAT ATTITUDE OR OPINION?

2. LET'S WORK ON THIS STORY AS A COLLABORATIVE AUTOBIOGRAPHY BY DISCUSSING THE DETIALS.WHAT IS THE NATURE OF YOUR WORKING REALITY IN ENVIRONMENTAL EDUCATION.
    A. WILL YOU MAP THE UNDERLYING TENSIONS, BOTH POSITIVE AND NEGATIVE.
    B. HOW DID YOU DERIVE THE COMMITMENT TO BE IN ENVIRONMENTAL EDUCATION.

3. WITHIN THE CONTEXT OF ENVIRONMENTAL EDUCATION HOW DO YOU ACT? WHAT ARE THE SPECIAL RELATIONSHIPS AND WATERSHED MOMENTS CONCERNING ENVIRONMENTAL EDUCATION?

QUESTION 2 CONTEMPORARY EXPERIENCE-THE PROCESS OF MENTORING

1. PLEASE DESCRIBE THE RELATIONSHIP WITH YOUR MENTOR, IT'S BEGINNING, DEVELOPMENT AND CURRENT STATUS
   A. TELL ME AS MANY DETAILS AS YOU CAN ABOUT THE MENTORING EXPERIENCE. WHAT WAS IT LIKE FOR YOU?

   B. THINKING BACK THROUGH YOUR LIFE HOW DID YOU COME TO BE A MENTOR/MENTORED?

   C PLEASE DESCRIBE YOUR EXPERIENCE OF BEING MENTORED. TALK ABOUT WAS MENTORING WAS LIKE FOR YOU.

   D. WOULD YOU PLEASE RECONSTRUCT ONE DAY OR ONE SESSION OF THE MENTORING FOR ME? TAKE ME THROUGH A DAY/SESSION WITH YOUR MENTOR/MENTEE.

   E. WHAT WAS IT LIKE FOR YOU TO BE MENTORED /BEING A MENTOR?TELL ME THE STORY OF YOUR MENTORING EXPERIENCE.

   F. COULD YOU TELL ME AS MUCH AS POSSIBLE ABOUT THE DETAILS OF YOUR MENTORING EXPERIENCE?

   G. TO CHANGE FROM PUBLIC TO PRIVATE VOICE- IF I WERE YOUR MENTOR/MENTOREE, WHAT WOULD YOU SAY TO ME?

2. WITHIN THE MENTORING CONTEXT, HOW DO YOU ACT? CAN YOU MAP OUT THE EMOTIONAL ARCHITECTURE OF THIS RELATIONSHIP?

3. HOW DID YOU GET TO BE THIS WAY? WHAT ARE THE WATERSHED MOMENTS YOU REMEMBER?

4. PLEASE ANY CHANGES IN THE RELATIONSHIP AND THE ENDING IF THERE IS ONE? CAN YOU MAKE THE EMOTIONAL ARCHITECTURE? THE TENSIONS BOTH POSITIVE AND NEGATIVE?

5. HOW DO YOU WANT TO BE IN THE FUTURE CONCERNING LEADERSHIP IN ENVIRONMENTAL EDUCATION, THE RELATIONSHIP WITH YOUR OWN MENTORING, YOUR OWN PROFESSIONAL DEVLOPMENT, YOUR POSSIBLE MENTORING OF OTHERS.

QUESTION 3 MAKING MEANING OF MENTORING

1. NOW THAT YOU HAVE DESCRIBED THIS MENTORING PROCESS AND HOW IT HAS INFLUENCED YOUR CAREER IN ENVIRONMENTAL EDUCATION, WHAT DOES MENTORING MEAN TO YOU?

    A. GIVEN WHAT YOU HAVE SAID ABOUT YOUR LIFE BEFORE YOU BECAME A MENTOR AND GIVEN WHAT YOU HAVE SAID ABOUT YOUR WORK NOW, HOW DO YOU UNDERSTAND MENTORING IN SOMEONE ELSE'S LIFE?

    B. WHAT SENSE DOES IT MAKE TO YOU FOR OTHERS?

2. WHAT DOES IT MEAN TO BE A MENTOR /MENTORED IN THE FIELD OF ENVIRONMENTAL EDUCATION?

3. HOW SHOULD MENTORING FIT INTO THE PROFESSIONAL DEVLOPMENT OF LEADERS IN ENVIRONMENTAL EDUCATION?

4. DESCRIBE THE BEST SCENARIO OF THE FUTURE OF MENTORING OF LEADERS IN ENVIRONMENTAL EDUCATION.

Appendix E

Consent Form

QUT

Consent Form

I agree to be interviewed by Carol Fortino from Queensland University of Technology, School of Social, Business and Environmental Education, Brisbane, Australia for the purposes of her PhD research. The questions will concern my background as a leader in environmental education, the mentoring process experienced by me, and the importance of mentoring to the field of environmental education. The interview will take between one and one/half hours at a date and time convenient to both the interviewee and the researcher.

I understand that the interview transcripts will be completed by the researcher or a reputable transcriber. I may ask to see a copy of the transcription to make any changes needed for clarification of my ideas as expressed during the interview. The interview tapes will be retained in the possession of the researcher.

I give permission to the researcher to use quotations or excerpts from the written transcription for her thesis, journal or book articles, papers, or presentations at conferences. I prefer the researcher to use my first name ___, initials___, or a pseudonym ___.(Please check). I give permission for the researcher to describe my present career position in specific ___ or general terms___, or pseudonym___. (Please check). There will be no monetary remuneration from the voluntary participation in this oral interview.

Signature__________________________

Date______________________________

Place_____________________________

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2 George Street
GPO Box 2434
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International Codes
Central Administration
Phone +61 7 864 2111
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Appendix F

Interview Schedule

Appendix F Interview Schedule

Initials	Date	City	State	Country
S. S.	May 28, 1993	Denver	CO	USA
P. C.	June 5, 1993	Denver	CO	USA
E. H.	June 5, 1993	Denver	CO	USA
B. H.	June 9, 1993	Denver	CO	USA
J. T.	June 11, 1993	Pueblo	CO	USA
B. H.	June 12, 1993	Pueblo	CO	USA
A. P.	June 12, 1993	Pueblo	CO	USA
L. S.	June 15, 1993	Denver	CO	USA
C B.	June 14, 1993	Denver	CO	USA
Cem. B	June 17, 1993	Ft. Collins	CO	USA
G. Mc	June 30, 1993	Pietermaritzburg	Natal	South Africa
W. T.	Aug. 20, 1993	Logan	QLD	Australia
G. L.	Aug. 20, 1993	Jacob's Well	QLD	Australia
R. C.	Aug. 30, 1993	Rockhampton	QLD	Australia
D. A.	Nov. 11, 1993	Wynum	QLD	Australia
D. T.	Nov. 24, 1993	Bribane	QLD	Australia
J. F	Dec. 1, 1993	Brisbane	QLD	Australia
G. M.	Feb. 2, 1994	Brisbane	QLD	Australia
H. M.	Feb. 3, 1994	Brisbane	QLD	Australia
M. H.	Feb. 8, 1994	Brisbane	QLD	Australia
J. M.	Feb. 10, 1994	Brisbane	QLD	Australia
S. Q.	Feb. 14, 1994	Sanford	QLD	Australia
J. O.	Feb. 15, 1994	Brisbane	QLD	Australia
C. L.	Feb. 17, 1994	Brisbane	QLD	Australia
B. M.	Feb. 20, 1994	Gold Coast	QLD	Australia
K. B.	July 27, 1994	Denver	CO	USA
G. S.	Aug. 30, 1994	Golden	CO	USA
I. L.	Aug. 31, 1994	Greeley	CO	USA
B. P.	June 23, 1995	Sent by Tape	Oregon	USA
P. Y.	July 7, 1995	Sent by Fax	Kentucky	USA

Appendix G

NUD.IST Results File with Coding Numbers

```
Q.S.R. NUD.IST Power version, revision 3.0.4 GUI.
Licensee: qut.

PROJECT: Mentor Project, User fortino, 2:48 pm, 12 Dec, 1995.

******************************************************************************
(70 3)                    /collections/philCongruence
*** Definition:
Search for (UNION (15 1 4 1) (16 1 4 1) (17 1 4 1) (18 1 4 1))
+++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *DAVE
+++ Retrieval for this document: 15 units out of 506, = 3.0%
269    *IS THERE ANOTHER ASPECT TO MENTORING.  DID THE MENTORING
++ Text units 283-297:
283    I don't think we ever sit down and talk about
284    environmental philosophy, because both of us understand
285    each others' position because we have worked together for
286    so long, it is just accepted.  You build up what I call
287    "short cuts" (Guber and Lincoln-what is going on between
288    two people who are communicating) The closer the people
289    are the less guessing has to take place to understand what
290    is being talked about.  As far as Jack and I are
291    concerned, there has been little guessing about things
292    environmental. We have listened to each other, talked to
293    people,  sat in each others session and listened for
294    twenty years now.  Over the years we have built up
295    detailed knowledge of each other. ( speaks of Jack giving
296    a lecture on the rainforest, I can almost stand up and
297    give jacks lecture)
+++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *ED
+++ Retrieval for this document: 20 units out of 417, = 4.8%
196    *CHARACTERISTICS OF MENTORS
++ Text units 216-223:
216    The personal group being my last choice, I can't say that
217    Barb or any of my mentors have actually changed my beliefs
218    or my view of the world, due to the fact that I think we
219    share a very strong commitment in the same beliefs that
220    the environment is there and it needs to be presented to
221    students and it needs to be a concern of all the people,
222    not just my high school student.  it was put last because
223    we don't have a great deal of conflict in that area.
++ Text units 288-299:

288    *FELLOWSHIP

289    The other thing about mentoring which has become very
290    important to me is the fellowship that is created from the
291    mentoring process.  I have spoken to that several
292    different times as far as Barb and myself, but I have also
293    had several other mentors that I feel I have a very strong
294    commitment to because of their belief in their program of
295    sharing environmental education, not only with students in
296    the high school, but also adults through Project WILD.
297    This mentoring process is real valuable to me in that it
298    has created a network of friends who are concerned about
299    the same things that I am concerned about.
+++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *H
+++ Retrieval for this document: 14 units out of 577, = 2.4%
310    *CAROL     HAVE YOU EVER ACKNOWLEDGED TO JOHN THAT YOU
++ Text units 326-336:
326    have done that if he hadn't seen it worthwhile.  I think to
327    a certain extent you have to agree with J     and the ways of
328    environmental education. ...If for example, you are very
329    much still in the nature study equals environmental
330    education way of thinking ...then I don't think John would
331    take too much time with you.  But I think with me, I
332    recognised the social side and the politics and all that
```

```
333   sort of thing, and the interdisciplinary nature of
334   environmental ed.  My basic views of environmental education
335   coincide with those of J      So it was not too much
336   opposition in terms of challenging things we believe.
454   *REVIEW OF THE TOPICS
++ Text units 505-507:
505   THOUGHTS ON HOW YOU THINK YOU COULD DO THIS IN THIS FIELD?
506   BECAUSE IT  SEEMS TO OFTEN BE INFORMAL, SERENDIPITOUS.
507   HILLARY    Philosophical Pheromones (laughing)
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *JACK
+++ Retrieval for this document: 5 units out of 489, = 1.0%
289   *SUE
++ Text units 295-299:
295   (418) She started off with courses here.  We wanted teachers
296   in biology and ecology, she was around to do the job...She
297   had been rather interested in conservation and those are
298   areas we have both been in agreement with.  He main area has
299   been the love for the forest.
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *M
+++ Retrieval for this document: 19 units out of 911, = 2.1%
++ Text units 384-398:

384   *(840) IS THIS TIED TO A SIMILARITY  IN PHILOSOPHICAL BELIEF

385   ABOUT ENVIRONMENTAL EDUCATION?
386   To some extent, yes.  I think if you were totally different
387   philosophically you wouldn't get on with John.  He doesn't
388   tolerate fools gladly.  I think I have that fairly similar,
389   but my philosophy has become more realistic, whereas I think
390   J    is still very idealistic.  But I think he's sort of
391   starting to learn.  I think at times he's a bit politically
392   naive.  I think he is becoming aware that people are trying
393   very hard and that rural communities are trying very hard to
394   improve their situation.  We do have similar
395   philosophies....I'm probably a little bit more conservative
396   over the years, but I think that is because I have become a
397   bit more realistic and realise you can't solve all your
398   problems overnight.  And maybe I'm wrong and history will
842   *REVIEW OF QUESTIONS
++ Text units 843-846:
843   ANY LAST THOUGHT ON HOW YOU GOT INVOLVED IN ENVIRONMENTAL
844   ED?
845   ... This is where J    and I are very similar.  We do feel
846   very strongly and very passionately,but through working here
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *
+++ Retrieval for this document: 12 units out of 881, = 1.4%
72    *WATERSHED MOMENT
++ Text units 73-77:
73    I'll never forget the day that Ken came out to the lab and
74    we were talking about what we could do together to get
75    people to look not just a water quality, but also at water
76    conservation.  Ken had brought some pages from that Forest
77    Service workshop.  We walked outside my office and went up
507   *CHARACTERISTICS OF MENTOR- FIRST CHOICE SPEAKING OF KEN
++ Text units 521-527:
521   about me.  In a major way he helped form my attitude about
522   the environment and because of those attitudes, I changed
523   my belief.  he didn't change my beliefs as I learned I
524   could do some of this stuff.  I do think he improved my
525   self-confidence.  I think transforming my view of the
526   world fits right under formulating my attitudes because
527   that was what it was about.  He was available for
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *SUE
+++ Retrieval for this document: 7 units out of 653, = 1.1%
153   *MEETING JACK
```

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++ Text units 171-177:
171   Jack and I had developed a close working relationship.  We
172   started with a woman who later became Jack's wife, ...who
173   started the rainforest area at Kelvin Grove. I got more
174   involved in school landcare groups.  a philosophical thing,
175   this is how you look after it, ..take care of your school,
176   not Landcare as it exists now    From then on I stood in for
177   Jack, parttime tutoring...I also started a Masters of
++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 1c WENDY
+++ Retrieval for this document: 10 units out of 454, = 2.2%
391   *CASCADE OF INFLUENCE
++ Text units 426-435:
426   into the same level.  Like I am in to having the kids
427   learn through it and it doesn't matter if I win or they
428   win or they did it or I did it.  We are going for the same
429   thing.  Glen had kid based programs and I think that was a
430   philosophical thing we agreed on and both believed that
431   the kids do it.  Of course we argued the whole time or
432   disagreed or debated everything. I think we always listen
433   to what the other person has got to say whether we have
434   opened up any other channels, I don't know.  I guess when
435   you listen to people you do anyway via discussion.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++ Total number of text units retrieved = 102
+++ Retrievals in 8 out of 27 documents, = 30%.
+++ The documents with retrievals have a total of 4888 text units,
    so text units retrieved in these documents = 2.1%.
+++ All documents have a total of 17581 text units,
    so text units found in these documents = 0.58%.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

Appendix H

Indexing Codes from NUDIST

```
NUD•IST Macintosh Version 3.0 GUI.
Licensee: Carol Fortino.

PROJECT: 3.0 Project, User , 3:31 pm, 3 Dec, 1994.

(1)              /base data
(1 1)             /base data/interviewee
(1 1 1)            /base data/interviewee/gender
(1 1 1 1)           /base data/interviewee/gender/male
(1 1 1 2)           /base data/interviewee/gender/female
(1 1 2)            /base data/interviewee/age group
(1 1 2 1)           /base data/interviewee/age group/20's
(1 1 2 2)           /base data/interviewee/age group/30's
(1 1 2 3)           /base data/interviewee/age group/40's
(1 1 2 4)           /base data/interviewee/age group/50's
(1 1 3)            /base data/interviewee/area
(1 1 3 1)           /base data/interviewee/area/school
(1 1 3 1 1)          /base data/interviewee/area/school/teacher
(1 1 3 1 2)          /base data/interviewee/area/school/administrator
(1 1 3 2)           /base data/interviewee/area/academia
(1 1 3 3)           /base data/interviewee/area/natural resources
(1 1 3 3 1)          /base data/interviewee/area/natural resources/DPI
(1 1 3 3 2)          /base data/interviewee/area/natural resources/CDW
(1 1 3 3 3)          /base data/interviewee/area/natural resources/DEH
(1 1 3 4)           /base data/interviewee/area/business
(1 1 3 4 1)          /base data/interviewee/area/business/public
(1 1 3 4 2)          /base data/interviewee/area/business/private
(1 1 3 5)           /base data/interviewee/area/consulting
(1 1 4)            /base data/interviewee/country
(1 1 4 1)           /base data/interviewee/country/USA
(1 1 4 2)           /base data/interviewee/country/Australia
(1 1 5)            /base data/interviewee/mentor
(1 1 5 1)           /base data/interviewee/mentor/one
(1 1 5 2)           /base data/interviewee/mentor/more than one
(1 2)             /base data/mentor
(1 2 1)            /base data/mentor/gender
(1 2 1 1)           /base data/mentor/gender/male
(1 2 1 2)           /base data/mentor/gender/female
(1 3)             /base data/length of the mentoring relationship
(1 4)             /base data/mentoring role
(1 4 1)            /base data/mentoring role/role
(1 4 1 1)           /base data/mentoring role/role/hyper-mentor
(1 4 1 2)           /base data/mentoring role/role/supra mentor
(1 4 1 3)           /base data/mentoring role/role/prime mentor
(1 4 1 4)           /base data/mentoring role/role/pivotal mentor
(1 4 1 5)           /base data/mentoring role/role/alpha mentoree
(1 4 1 6)           /base data/mentoring role/role/beta-mentoree
(2)              /autobiography
(2 3)             /autobiography/personal development
(2 3 1)            /autobiography/personal development/childhood
(2 3 1 1)           /autobiography/personal development/childhood/outdoor
(2 3 1 2)           /autobiography/personal development/childhood/other
(2 3 2)            /autobiography/personal development/schooling
(2 3 2 1)           /autobiography/personal development/schooling/primary
(2   3   2   1   1)                                    /autobiography/personal
development/schooling/primary/fieldwork
(2 3 2 1 2)          /autobiography/personal development/schooling/primary/teachers
(2 3 2 2)           /autobiography/personal development/schooling/secondary
```

(15 1 3 2) /alpha mentoree/telling of self as mentoree/understanding of the relationship/perceived

(15 1 3 2 1) /alpha mentoree/telling of self as mentoree/understanding of the relationship/perceived/acknowledged

(15 1 3 3) /alpha mentoree/telling of self as mentoree/understanding of the relationship/deliberate

(15 1 3 4) /alpha mentoree/telling of self as mentoree/understanding of the relationship/cascade

(15 1 3 4 1) /alpha mentoree/telling of self as mentoree/understanding of the relationship/cascade/benefits as mentoree

(15 1 3 4 2) /alpha mentoree/telling of self as mentoree/understanding of the relationship/cascade/benefits if becoming mentor

(15 1 3 5) /alpha mentoree/telling of self as mentoree/understanding of the relationship/personal influence of mentor

(15 1 3 6) /alpha mentoree/telling of self as mentoree/understanding of the relationship/effectiveness

(15 1 3 7) /alpha mentoree/telling of self as mentoree/understanding of the relationship/watershed moments

(15 1 4) /alpha mentoree/telling of self as mentoree/characteristics as mentoree

(15 1 4 1) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/philosophical congruence

(15 1 4 2) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/academic qualifications

(15 1 4 3) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/integrity

(15 1 4 4) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/trust

(15 1 4 5) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/complimentarity

(15 1 4 6) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/spark of interest

(15 1 4 7) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/ accept feedback

(15 1 4 8) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/ take challenges

(15 1 4 9) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/personal style

(15 1 4 10) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/interpersonal processes

(15 1 4 10 1) /alpha mentoree/telling of self as mentoree/characteristics as mentoree/interpersonal processes/disclosure

(15 2) /alpha mentoree/decribed as mentoree

(15 2 1) /alpha mentoree/decribed as mentoree/professional relationship

(15 2 1 1) /alpha mentoree/decribed as mentoree/professional relationship/initiation

(15 2 1 1 1) /alpha mentoree/decribed as mentoree/professional relationship/initiation/accidental

(15 2 1 1 2) /alpha mentoree/decribed as mentoree/professional relationship/initiation/on purpose

(15 2 1 2) /alpha mentoree/decribed as mentoree/professional relationship/development

(15 2 1 2 1) /alpha mentoree/decribed as mentoree/professional relationship/development/networking

(15 2 1 2 2) /alpha mentoree/decribed as mentoree/professional relationship/development/support

(15 2 1 3) /alpha mentoree/decribed as mentoree/professional relationship/collegiality

(19 4 3 2 1) /hyper mentor/referred to as mentor/understanding of the relationship/perceived/acknowledged
(19 4 3 3) /hyper mentor/referred to as mentor/understanding of the relationship/deliberate
(19 4 3 4) /hyper mentor/referred to as mentor/understanding of the relationship/cascade
(19 4 3 5) /hyper mentor/referred to as mentor/understanding of the relationship/personal influence of mentor
(19 4 3 6) /hyper mentor/referred to as mentor/understanding of the relationship/effectiveness
(19 4 4) /hyper mentor/referred to as mentor/characteristics of mentor
(19 4 4 1) /hyper mentor/referred to as mentor/characteristics of mentor/philosophical congruence
(19 4 4 2) /hyper mentor/referred to as mentor/characteristics of mentor/academic qualifications
(19 4 4 3) /hyper mentor/referred to as mentor/characteristics of mentor/integrity
(19 4 4 4) /hyper mentor/referred to as mentor/characteristics of mentor/trust
(19 4 4 5) /hyper mentor/referred to as mentor/characteristics of mentor/complimentarity
(19 4 4 6) /hyper mentor/referred to as mentor/characteristics of mentor/spark of interest
(19 4 4 7) /hyper mentor/referred to as mentor/characteristics of mentor/ability to take feedback
(19 4 4 8) /hyper mentor/referred to as mentor/characteristics of mentor/ability to accept challenges
(19 4 4 9) /hyper mentor/referred to as mentor/characteristics of mentor/personal style
(19 4 4 10) /hyper mentor/referred to as mentor/characteristics of mentor/interpersonal processes
(19 4 4 10 1) /hyper mentor/referred to as mentor/characteristics of mentor/interpersonal processes/disclosure
(20) /Other Mentor fix
(20 1) /Other Mentor fix/professional relationship
(20 1 1) /Other Mentor fix/professional relationship/initiation
(20 1 1 1) /Other Mentor fix/professional relationship/initiation/accidental
(20 1 1 2) /Other Mentor fix/professional relationship/initiation/on purpose
(20 1 2) /Other Mentor fix/professional relationship/development
(20 1 2 1) /Other Mentor fix/professional relationship/development/networking
(20 1 2 2) /Other Mentor fix/professional relationship/development/support
(20 1 3) /Other Mentor fix/professional relationship/collegiality
(20 1 4) /Other Mentor fix/professional relationship/co-laterality
(20 1 5) /Other Mentor fix/professional relationship/peer
(20 1 6) /Other Mentor fix/professional relationship/equal
(20 1 7) /Other Mentor fix/professional relationship/change over time
(20 1 7 1) /Other Mentor fix/professional relationship/change over time/pro
(20 1 7 3) /Other Mentor fix/professional relationship/change over time/difficulties
(20 1 7 4) /Other Mentor fix/professional relationship/change over time/challenges
(20 1 7 5) /Other Mentor fix/professional relationship/change over time/professional sparks
(20 1 8) /Other Mentor fix/professional relationship/Dormancy
(20 1 9) /Other Mentor fix/professional relationship/Re-activation
(20 1 10) /Other Mentor fix/professional relationship/mentor's influence on career
(20 2) /Other Mentor fix/personal relationship

Appendix I

Search for 'Cascade of Influence' Concept across all the Transcripts

```
Q.S.R. NUD.IST Power version, revision 3.0.4 GUI.
Licensee: qut.

PROJECT: Mentor Project, User fortino, 8:45 pm, 19 Dec, 1995.

*************************************************************
**********************
(70 5)          /collections/IndSysSrch/cascade of mentoring
*** Definition:
Search for (COLLECT (5 11))
++++++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *BARB
+++ Retrieval for this document: 90 units out of 414, = 22%
136  *CHARACTERISTICS OF MENTORING
++ Text units 139-169:
 HOW DO YOU FEEL ABOUT MENTORING?.
143
144  I think to some degree, you probably have differing levels
145  of success of mentoring.  You can set the situation up but
146  if the fireworks aren't there or the communication or the
147  personalities, it may only succeed marginally, average and
148  every now and then it might hit it off to a great end.  I
149  think it is a great concept and idea.  I never looked at
150  this (Water Project) that I would be a mentor to these
151  teachers.  I think it is another network that has been a
152  side effect of this River Watch Program, perhaps as a
153  function of my personality.  Perhaps more as a function of
154  the educational structure.  Teachers aren't use to having
155  the support.  They are not used to somebody giving them
156  something and saying take it, run with it, call us if you
157  have a question, we will be there.  And when they do, we are
158  there.  to establish that, to learn about what they do and
159  go through, it has been a wonderful friendship.  One reason
160  it works, is because it is informal, but it is formal.  It
161  is social, it is personal and yet it is not.  The bottom
162  line is that we all have to work together to make it work
163  and all are doing it for the right reason, not "right", but
164  the same reason- for the resource and for the kids.
165

166    *DISTINGUISHING  AN  ENVIRONMENTAL  NETWORK
RELATIONSHIP AND

167  THE MENTORING RELATIONSHIP WITH ED.
168
169  I guess I have never sat back and said, "hm, I a mentoring".
```

333 *PART III MENTORING IN GENERAL
++ Text units 335-382:
335 NOW THAT YOU ARE CONSCIOUS THAT YOU HAVE BEEN A MENTOR FOR
336 SOMEONE, AND KNOWING THAT IT IS MORE THAN THE RELATIONSHIP
337 THAT YOU HAVE WITH SOMEONE IN A NETWORK, WOULD YOU BE
338 WILLING TO DO IT AGAIN.
339
340 I don't think I would formalise it anymore than it is
341 formalised now. Like the first connection might be through
342 a project or a program. But that would be the extent of the
343 formality. Because the relationship has to be based more on
344 than a particular project. It has to be deeper than that.
345
346 (CAROL REFERS TO FORMALISED VOLUNTEER MENTOR PROGRAMS) WOULD
347 THAT WORK IN THE FIELD OF E.E.?
348
349 Again, I think the degree of success if going to vary with
350 the types of connections that are made. As long as it can
351 effectively communicate what I have to offer and what
352 somebody else has to offer, if we have something in common
353 that we can grow from and have offshoots. That is where the
354 informality starts coming in to develop a friendship.
355
356 To me mentoring would be more of a 3-D type relationship
357 rather that a flat surface. It is the 3-D part that you
358 couldn't formalise and couldn't make happen. You could set
359 up the structure and I do think there is probably a
360 beautiful niche out there for resource people who have a lot
361 to offer and teachers could benefit greatly from a one-on-
362 one.
363
364 You do your standard ways of survey and interviews and I
365 think those would have to cross the boundaries of questions.
366 deeper than do you like to teach water. You are almost
367 matching, like two college roommates, you are somewhat
368 matching personalities perhaps. That is what I would see as
369 maximising the project. I have seen them try mentoring with
370 underprivileged kids, but it has to be a two-way street. If
371 they don't want to be there, you are not going to help them
372 and visa versa.
373

374 *WHAT DOES A MENTOR GET OUT OF THE RELATIONSHIP?

375
376 It doesn't hurt by any means in a very negative world if you
377 tend to do something successful, the way our hierarchy is
378 set up in many organisations is that you usually get
379 punished if your are successful and you didn't give credit
380 to the right places, you are badgered rather than good job,
381 that is what your are here for. When you have these kinds
382 of relationships- Ed reminds me everyday that he makes me
393 *DID YOU HAVE A MENTOR?
++ Text units 404-414:
404 Officially now, I guess. I feel like we (Ed and Barbara Pullen) will
405 be friends forever in whatever tangent. If I left this
406 field tomorrow, I would always keep in touch with Ed and
407 hope that he was doing what he wanted to do and was happy.
408 Thanks to him for being there and don't ever give up.
409
410 Whether (mentoring in environmental education) is informal
411 or formal, I think it is a great thing and if there is
412 anyway it can be facilitated, if somebody comes up with a
413 great invention, I would like to hear about it.
414
++
+++ ON-LINE DOCUMENT: *BOB
+++ Retrieval for this document: 102 units out of 599, = 17%
266 *BOB'S COMMENTS FROM THE QUESTIONNAIRE ABOUT JACK
++ Text units 292-306:
292 really have a philosophical disagreement with them I say look, let's
293 not do this work together. To work with people it is trust and
294 taking you on and sharing your secrets. Some people have not been
295 prepared to share anything because they are competitors. That is
296 fair enough. (speaks of the publishing market and healthy
297 competition) A mentor should evaluate the person that they are
298 obviously going to help, but then open up and tell them everything
299 from dot to go. (speaks of sharing the info with another if they are
300 really interested- the tall poppy is going to be replaced with a
301 healthy competition)
302 AGAIN DISTINGUISHING A MENTOR FROM SOMEONE YOU WILL SHARE WITH ON
303 THE NETWORK. IT'S THEIR AVAILABILITY, ITS THEIR WILLINGNESS TO GIVE
304 YOU TRADE SECRETS. LET'S APPLY THIS TO JACK.
305 (598) (speaks of his water sample bottle) He was quite happy for

306 me to use it, publish it, put my name on the front of it, but
484 *Part III Mentoring of Leader in Environmental Education
++ Text units 488-526:
488 ARE SPONSORING, MAYBE YOU ARE PRESENTING THEM AN OPPORTUNITY. HOW
489 DO YOU GET THE BULLDOZER OPERATORS, THE COMMUNITY PEOPLE, THE SURF
490 RIDERS. MAYBE THERE IS A POTENTIAL LEADER THERE. HOW CAN WE KEEP
491 THIS GOING?
492 (979) There is a surf rider...a very keen and enthusiastic young man.
493 You have to support the work that gets people together. The big
494 thing is to totally obliterate this "tall poppy" thing and encourage
495 people to promote themselves in an Australian way. So we have to
496 find our own way. I've been trying to search for it, but I don't think
497 I have really found it. I always try to be positive. Never knock. I
498 think in trying to be positive about things, it helps eliminate that
499 "tall poppy" thing. Supporting the activist groups, supporting the
500 non-activists like MESA and the Science Teachers Association,
501 supporting their conferences.
502 IF YOU SEE SOMEONE IN THAT GROUP?
503 Just go out for a beer with them and say, "Go for it". That is what I
504 constantly tell people who write to me. I can see that they are
505 thirsting, they just want a bit of encouragement.
506 HOW DO WE GET THIS TO MENTORING TO HAPPENED MORE THAN
507 ACCIDENTALLY?

508 * suggestion on mentoring

509 I suppose you could run a course in mentoring. Publishing is a big
510 way too. Like in business you have the top ten business men
511 interviewed. (speaks of Dick Smith who went to Canada and said I
512 love what you are doing, how did you do it, can I copy it). Admit
513 that you don't know everything. Ask dumb questions and the more
514 successful you become, how did you do that? (speaks of high
515 school teacher hating to admit they don't know everything, but can
516 understand why they might do it , ie the power base.) You are
517 really asking me something about human nature. I really don't know
518 the answer to this one. I think that it is trusting people more and
519 it being an attitude of asking constant questions and admitting
520 that you don't know all the answers and in that you are able to
521 increase your learning.

Appendix J

Search for 'Philosophical Congruence' Concept across all the Transcripts

```
Q.S.R. NUD.IST Power version, revision 3.0.4 GUI.
Licensee: qut.

PROJECT: Mentor Project, User fortino, 4:07 pm, 17 Feb, 1996.

*************************************************************
**********************
(70 3)          /collections/philCongruence
*** Definition:
Search for (UNION (15 1 4 1) (16 1 4 1) (17 1 4 1) (18 1 4 1))
+++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *DAVE
+++ Retrieval for this document: 15 units out of 506, = 3.0%
269   *IS THERE ANOTHER ASPECT TO MENTORING.  DID THE
MENTORING
++ Text units 283-297:
283   I don't think we ever sit down and talk about
284   environmental philosophy, because both of us understand
285   each others' position because we have worked together for
286   so long, it is just accepted.  You build up what I call
287   "short cuts" (Guber and Lincoln-what is going on between
288   two people who are communicating) The closer the people
289   are the less guessing has to take place to understand what
290   is being talked about.  As far as Jack and I are
291   concerned, there has been little guessing about things
292   environmental. We have listened to each other, talked to
293   people,  sat in each others session and listened for
294   twenty years now.  Over the years we have built up
295   detailed knowledge of each other. ( speaks of Jack giving
296   a lecture on the rainforest, I can almost stand up and
297   give jacks lecture)
+++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *ED
+++ Retrieval for this document: 20 units out of 417, = 4.8%
196   *CHARACTERISTICS OF MENTORS
++ Text units 216-223:
216   The personal group being my last choice, I can't say that
217   Barb or any of my mentors have actually changed my beliefs
218   or my view of the world, due to the fact that I think we
219   share a very strong commitment in the same beliefs that
220   the environment is there and it needs to be presented to
221   students and it needs to be a concern of all the people,
222   not just my high school student.  it was put last because
223   we don't have a great deal of conflict in that area.
++ Text units 288-299:
```

288 *FELLOWSHIP
289 The other thing about mentoring which has become very
290 important to me is the fellowship that is created from the
291 mentoring process. I have spoken to that several
292 different times as far as Barb and myself, but I have also
293 had several other mentors that I feel I have a very strong
294 commitment to because of their belief in their program of
295 sharing environmental education, not only with students in
296 the high school, but also adults through Project WILD.
297 This mentoring process is real valuable to me in that it
298 has created a network of friends who are concerned about
299 the same things that I am concerned about.
++
+++ ON-LINE DOCUMENT: *H
+++ Retrieval for this document: 14 units out of 577, = 2.4%
310 *CAROL HAVE YOU EVER ACKNOWLEDGED TO JOHN THAT YOU
++ Text units 326-336:
326 have done that if he hadn't seen it worthwhile. I think to
327 a certain extent you have to agree with John and the ways of
328 environmental education. ...If for example, you are very
329 much still in the nature study equals environmental
330 education way of thinking ...then I don't think John would
331 take too much time with you. But I think with me, I
332 recognised the social side and the politics and all that
333 sort of thing, and the interdisciplinary nature of
334 environmental ed. My basic views of environmental education
335 coincide with those of J . So it was not too much
336 opposition in terms of challenging things we believe.
454 *REVIEW OF THE TOPICS
++ Text units 505-507:
505 THOUGHTS ON HOW YOU THINK YOU COULD DO THIS IN THIS FIELD?
506 BECAUSE IT SEEMS TO OFTEN BE INFORMAL, SERENDIPITOUS.
507 HILLARY Philosophical Pheromones (laughing)
++
+++ ON-LINE DOCUMENT: *JACK
+++ Retrieval for this document: 5 units out of 489, = 1.0%
289 *SUE
++ Text units 295-299:
295 (418) She started off with courses here. We wanted teachers
296 in biology and ecology, she was around to do the job...She
297 had been rather interested in conservation and those are
298 areas we have both been in agreement with. He main area has

299 been the love for the forest.
++
+++ ON-LINE DOCUMENT: *M
+++ Retrieval for this document: 19 units out of 911, = 2.1%
++ Text units 384-398:

384 *(840) IS THIS TIED TO A SIMILARITY IN PHILOSOPHICAL BELIEF

385 ABOUT ENVIRONMENTAL EDUCATION?
386 To some extent, yes. I think if you were totally different
387 philosophically you wouldn't get on with John. He doesn't
388 tolerate fools gladly. I think I have that fairly similar,
389 but my philosophy has become more realistic, whereas I think
390 J is still very idealistic. But I think he's sort of
391 starting to learn. I think at times he's a bit politically
392 naive. I think he is becoming aware that people are trying
393 very hard and that rural communities are trying very hard to
394 improve their situation. We do have similar
395 philosophies....I'm probably a little bit more conservative
396 over the years, but I think that is because I have become a
397 bit more realistic and realise you can't solve all your
398 problems overnight. And maybe I'm wrong and history will
842 *REVIEW OF QUESTIONS
++ Text units 843-846:
843 ANY LAST THOUGHT ON HOW YOU GOT INVOLVED IN ENVIRONMENTAL
844 ED?
845 ... This is where J and I are very similar. We do feel
846 very strongly and very passionately,but through working here
++
+++ ON-LINE DOCUMENT: *
+++ Retrieval for this document: 12 units out of 881, = 1.4%
72 *WATERSHED MOMENT
++ Text units 73-77:
73 I'll never forget the day that Ken came out to the lab and
74 we were talking about what we could do together to get
75 people to look not just a water quality, but also at water
76 conservation. Ken had brought some pages from that Forest
77 Service workshop. We walked outside my office and went up
507 *CHARACTERISTICS OF MENTOR- FIRST CHOICE SPEAKING OF KEN
++ Text units 521-527:
521 about me. In a major way he helped form my attitude about
522 the environment and because of those attitudes, I changed
523 my belief. he didn't change my beliefs as I learned I

```
524  could do some of this stuff.  I do think he improved my
525  self-confidence.  I think transforming my view of the
526  world fits right under formulating my attitudes because
527  that was what it was about.  He was available for
+++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: *SUE
+++ Retrieval for this document: 7 units out of 653, = 1.1%
153   *MEETING JACK
++ Text units 171-177:
171  Jack and I had developed a close working relationship.  We
172  started with a woman who later became Jack's wife, ...who
173  started the rainforest area at Kelvin Grove. I got more
174  involved in school landcare groups.  a philosophical thing,
175  this is how you look after it, ..take care of your school,
176  not Landcare as it exists now    From then on I stood in for
177  Jack, parttime tutoring...I also started a Masters of
+++++++++++++++++++++++++++++++++++++++++
+++ ON-LINE DOCUMENT: 1c WENDY
+++ Retrieval for this document: 10 units out of 454, = 2.2%
391   *CASCADE OF INFLUENCE
++ Text units 426-435:
426  into the same level.  Like I am in to having the kids
427  learn through it and it doesn't matter if I win or they
428  win or they did it or I did it.  We are going for the same
429  thing.  Glen had kid based programs and I think that was a
430  philosophical thing we agreed on and both believed that
431  the kids do it.  Of course we argued the whole time or
432  disagreed or debated everything. I think we always listen
433  to what the other person has got to say whether we have
434  opened up any other channels, I don't know.  I guess when
435  you listen to people you do anyway via discussion.
++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++
+++ Total number of text units retrieved = 102
+++ Retrievals in 8 out of 27 documents, = 30%.
+++ The documents with retrievals have a total of 4888 text units,
  so text units retrieved in these documents = 2.1%.
+++ All documents have a total of 17581 text units,
  so text units found in these documents = 0.58%.
++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++
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Appendix K

Glossary of Terms

Glossary of Terms

Arena - a field of conflict or endeavour (Macquarie, 1987: 23).

Axial coding - is defined as a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories (Strauss and Corbin, 1990: 96).

Cascade - a continuation of the mentoring process from mentors to mentorees as illustrated through case stories of pairs, triads, chains and webs. These relationships involve alpha and beta mentorees, prime, pivotal, supra and hyper mentors (See 'Construct of Terms' pp 160-161).

Case - a group of autobiographical narrative stories of mentoring relationships involving pairs, triads, chains or webs of mentors and mentorees. Each case consists of two or more records.

Category - concepts are compared against one another and appear to pertain to a similar phenomenon. Thus, the concepts are grouped together under a higher order, more abstract concept (Strauss and Corbin, 1990: 61).

Chain - the mentoring relationships involving one alpha mentoree, the prime mentor, the supra mentor and the hyper mentor.

Concepts - conceptual labels placed on discrete happening, event, and other instances of phenomena (Strauss and Corbin, 1990: 61).

Constant comparative analysis - a research procedure using deductive and inductive reasoning by which each piece of data - statistical background, open comments, interview transcript information - is compared to each other in order to discover similarities, differences, patterns and common properties. As the concepts begin to cluster, the method leads to further comparison and category refinements (Strauss and Corbin, 1990: 62).

Contextual background - information about a person's personal history including childhood to adulthood and his/her professional career from student to leader.

Core category - the central phenomenon around which all the other categories are integrated (Strauss and Corbin, 1990: 116).

Dimensions - location of properties along a continuum (Strauss and Corbin, 1990: 61).

Domain - a field of action or thought (Macquarie, 1987: 128).

Environmental education - information from a variety of orientations including formal education, natural resources, government and community sectors to provide knowledge, skills and attitudes/values *in*, *about*, and *for* the critical issues necessary for the conservation and sustainable development of the natural and built environment.

Ethics - a system of moral principles, by which human action and proposals may be judged good or bad or right or wrong (Macquarie, 1987: 144).

Grounded Theory- the grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon (Strauss and Corbin 1990: 24).

Indigenous codes - ideas and words which occurred in the text of the surveys or the interviews (Burroughs-Lange).

Inherit -NUD.IST- group nodes under a larger node heading (QSR NUD.IST, 1995)

In vivo codes - words and phrases used by the informants themselves that draw attention to the researcher (Glaser, 1978:70; Strauss, 1987:33).

Leadership - leaders induce the followers to act for certain goals that represent the values and the motivation - the wants and needs, the aspirations and expectations - of both leaders and followers (Burns, 1978 in Callaway, 1990 p 5).

Mentor - a guide in life who provide information, support, and feedback on personal and professional levels (Segerman-Peck, 1991).

Mentoree - someone who has acknowledged the interactional relationship with and support of a mentor. This may happen at various stages of development - novice, protégé or leader, in early, mid or late career.

Meta-categories - a unifying title for clusters of substantive categories which tie together certain concepts.

Pair - the mentoring relationship involving an alpha mentoree and his/her prime mentor.

Participant - a questionnaire respondent or an identified mentor who was interviewed.

Philosophy - a system of principles for guidance in practical affairs (Macquarie, 1987: 297).

Philosophical congruence - a shared system of principles, attitudes and values about environmental education.

Professional development - personal reflection which involves open, active communication between the inner self (encompassing personal knowledge and world view) and one's social context (comprising public knowledge and professional practice). This self-evaluative dialogue works toward a better understanding of the knowledge, values and practice of one's chosen field of work (Butler, 1992).

Philosophical grounding - a system of personal beliefs based on self-reflection regarding environmental concerns.

Properties - attributes or characteristics pertaining to that category (op cit).

Record - The autobiographical story of a 'cascade' of mentoring involving one pair, triad, chain or web of mentoring relationships.

Research vitality - the characteristic of a grounded theory study which describes the degree to which the data rather than the researcher controls the future direction of the study (Goodwin, 1986).

Respondent - identified leaders from Colorado, USA and Queensland, Australia who filled out the survey questionnaire.

Saturation - that point in a grounded theory study when no new information surfaces as the data are collected and analysed and repetition being to occur (Goodwin, 1986).

Sector - any field or division of a field of activity (Macquarie, 1987: 362).

Sphere - a field of activity or operation (Macquarie, 1987: 387).

Subjects - both the survey respondents and the interview participants who have similar opinions and ideas.

Substantive categories - Concrete titles taken directly from the substantive data, often borrowing descriptive language from the data itself to form the concept categories.

Substantive data - data taken from the substance of the area under study, in this case the survey questionnaire and interview transcripts from selected leaders of environmental education and their nominated mentors.

Theoretical categories - clusters of substantive categories that are described in more general theoretical terms.

Triad - the mentoring relationship involving one alpha mentoree, the prime mentor and the supra mentor.

Transformational leader - a transformational leader demonstrates the five attributes of 1)vision-view of the future, 2) influence orientation-the process of shared attention to problems resulting in increased delegation and empowerment of followers, 3) people orientation the strength of individuals on the team are maximised, 4) motivational orientation-followers accept the vision and mission due to performance and results, 5) values orientation-the moral fibre of the leader including commitment, integrity, trust and respect (Roueche, Baker and Rose, 1989:90 in Carraway, 1990 :13).

Web - the mentoring relationships involving several alpha mentorees, the one pivotal mentor and his/her supra mentor. This web may also extend to beta mentorees.

Appendix L

Schedule of Presentations

AUSTRALIAN
LIBRARY AND
INFORMATION
ASSOCIATION

REFERENCE AND INFORMATION SERVICE SECTION
RAISS (Qld Group)

presents

Mentors and Mentoring: Various Approaches

Speakers will provide insights into the variety of current mentoring schemes: peer group assisted learning, mentoring in the profession - the Victorian Branch experience and recent research.

DATE: Wednesday 11 May 1994

TIME: 5:30 p.m. for 6:00 p.m.

VENUE: Auditorium
1st floor, main Hospitality Building
COTAH
Cnr Merivale and Tribune Sts
South Brisbane

COST: Free

Drinks and refreshments available from 5:30 p.m. at Bistro, 3rd floor

ALL WELCOME

For Further information contact:

Grace Saw
Ph: (07) 864 4232
Email: g.saw@qut.edu.au
or
Margaret Smith
Ph: (07) 864 1592
Email: mf.smith@qut.edu.au

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The Centre for Applied Environmental and Social Education Research

Special Research Colloquia

On Tuesday 31 May, the Centre for Applied Environmental and Social Education Researc
(CAESER) Research Colloquia will be conducting a session on:

"MENTORING EXPERIENCES OF LEADERS IN ENVIRONMENTAL EDUCATIO
the cascade of influence and the implications for professional development"
(PhD research in progress)

WITH
CAROL FORTINO
School of Social, Business and Environmental Education

All researchers are invited to attend CAESER Research Colloquia on every first and thi
Tuesday each month. For further information contact Dr Anne Russell, 864 3266 or Dr Jo
Lidstone 864 3289 or Gail Fellows 864 3075.

PLEASE NOTE: THIS WILL BE HELD IN ROOM B409

from 4:00 pm to 6:00 pm

BEST COPY AVAILABLE

Dates for future meetings:

May 17 May 31 (Special) June 7	June 21 July 5 July 19	August 2 August 16 September 6	September 20 October 4 October 18	November 1 November 15 December 6	Decem

RESEARCH SEMINAR

GRADUATE SCHOOL OF EDUCATION

THE ROLE OF MENTORING IN THE DEVELOPMENT OF LEADERS

BY

CAROL FORTINO

CENTRE FOR APPLIED ENVIRONMENTAL AND SOCIAL EDUCATION
RESEARCH - QUT

ON

THURSDAY 10 AUGUST, 1994

AT

1PM IN ROOM 120

ALL WELCOME

EE Research Network

A Sub-Chapter of the Australian Association for
Environmental Education

August 1995

Who were your mentors?
Did you have a special person encourage you to become an environmental educator? This month's speaker did and decided to write a PhD on it!
Carol Fortino is approaching the end of her Phd at QUT, and aims to submit in December.
Carol is originally from the United States, where she worked as a Middle School Science teacher.
She will reveal to us, next Wednesday night, her findings on "The mentoring of experiences of leaders in environmental education: The cascade of influence and the implications for professional development."

The discussion will reveal the process and the preliminary findings that Carol has developed. The main focus is on the personal and professional influences in career development for environmental educators. Perspectives are provided from United States and Australian examples.

Besides completing her PhD, and teaching part-time for the School of Social, Business and Environmental Education at QUT, Carol is providing inservice training to teachers on the international environmental education curriculum program called "Project Wild".
If you're interested in mentoring in the field of environmental education or want to find out more about Project Wild, this is the meeting for you! See you there!

Housekeeping

At this week's meeting I would like to put a suggestion to the group for a $5 yearly membership charge to cover the cost of paper, envelopes, labels and postage. If you know of a better way let me know!
I would also like some offers for chairpersons for the meetings leading up to Christmas.
Next month's newsletter will include a questionnaire for feedback on the future of the Research Network. If you can give me ideas of what to cover or some help in compiling this

EE Research Network

A Sub-Chapter of the Australian Association for
Environmental Education

September 1995

If You Missed Last Meeting...

Carol Fortino explained her PhD study on how environmental educators can have one major mentor who influenced their environmental education career.

She discovered how to find key mentors and asked about their main mentor and the qualities that influenced them. In the US, she even traced back three 'generations' to a "supermentor", the famous Aldo Leopold himself. It was amazing stuff - like an environmental educator family tree!

A very interesting discussion arose about determining the qualities of a mentor. It was a thoroughly enjoyable topic and one enjoyed by all. If you weren't at the meeting you missed out, big time!

For the Highly Courageous!

Have you ever decided to do a research study, but had difficulties streamlining your topic?

This month's speakers have.. The speakers are Liz Baker and Julie Davis. Liz Baker has been undertaking her PhD topic for the past 18 months and reflects on her soul-searching struggle for focussing her topic. Liz would like to explore informally some of the aspects involved in trying to formulate a PhD topic.. How do you identify key themes, build upon them and stay focussed?

Julie Davis has hit this wall!. How can she fulfil her enthusiasm in EE research with her commitment towards her University position, for her PhD?

So join the next meeting with Julie and Liz to find out more!

The next meeting is 7pm, Wednesday 6th September,
Royal Geographical Society Building
112 Brookes Street, Fortitude Valley.

P.S. Don't forget your $1 for munchies and tea or coffee.

See *you* there!

Questionnaire

This newsletter includes a questionnaire for feedback and to determine the future of the Research Network. Please complete the questionnaire and send it in the return addressed envelope by the Ocotober meeting. This is important if the research network is to continue! Thanks everyone!

Ms Carol Fortino
QUT-SBEE
Locked Bag No. 2
Red Hill
Qld 4059

Dear Carol,

Thanks for your time and effort into the discussion on mentoring of experiences of leaders in environmental education. The idea of cascading influences and how many of these mentors were long time friends indicated the value of environmental education as a lifetime experience. The discussion also suggested action and behaviour applicable to influencing others, which is what environmental education seems to strongly entail.

Everybody present thoroughly enjoyed themselves with the thought-provoking concepts and the understanding of the power of mentoring.

Thanks again for sharing your ideas and Phd with us.

Yours sincerely,

Longhurst

Carolyn Longhurst
on behalf of the AAEE Research Network.

Mentoring Experiences of Leaders in Environmental Education: the cascade of influence and its implications for professional development

PhD Candidate: Carol Fortino

Thesis Advisers: Dr. John Lidstone

Dr. Roy Ballantyne

Queensland University of Technology, Kelvin Grove

School of Social, Business, and Environmental Education

Presented to

European-Australian Invitational Seminar
on Research in Environmental Education
Binna Burra, Australia

13-15, November 1995

Memo

To: Dean of Education, Heads of Schools, Directors of Research Centres/Concentrations and other faculties within QUT

From: Helen Valentine, Education Faculty

Date: 25 March 1996

Subject: **ORAL EXAMINATION OF PHD THESIS**

As required under PhD regulation 9.2, a PhD candidate must undergo an oral examination by the faculty to which they are attached to determine whether their thesis is acceptable for examination.

You are invited to attend and participate in the oral examination seminars for the following students:

CANDIDATES NAME: Ms Carol Fortino

RESEARCH CONCENTRATION: Centre for Applied Environmental and Social Education

THESIS TITLE: *Mentoring Experiences and Professional Development for Leaders in Environmental Education: The Cascade of Influence.*

DATE: 2 April 1996

TIME: 2.00pm

VENUE: B309, B Block, Kelvin Grove campus, QUT

The examination will be attended by the nominated Faculty Examination Panel and other interested staff and students are welcome to attend. Could you please inform the people in your section of this event.

Helen Valentine
Administration Officer - Student Affairs
Faculty of Education
Ph: 3864 3948

cc. Ms Carol Fortino, Ms Tammy Kwan, Dr Roy Ballantyne

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